

**FACTORS INFLUENCING THE IMPLEMENTATION OF THE
NEW BASIC EDUCATION CURRICULUM IN MOZAMBICAN
SCHOOLS**

by

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Presented in partial fulfillment of the requirement for the

Philosophiae Doctor (PhD) in Education Policy Studies

in the

Department of Education Management and Policy Studies

Faculty of Education

at the

UNIVERSITY OF PRETORIA

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October 2008



DEDICATION

I would like to pay tribute to my late mother Nwajohanne whose example as an educator is still enlightening me in all circumstances of life.

To my father Arrone, who always found in education the way to understand the world and get a better life.



DECLARATION

I declare that this research report handed in herewith for the degree of Doctor of Philosophy at University of Pretoria is the researcher's independent work. It has not been submitted for a degree or examination before in this or any other university.

Mucavele, Simão

Date

ACKNOWLEDGEMENT

I would like to express my heartfelt thanks to:

- Dr. Victoria L. Bernhardt for the copyright permission to adapt survey questionnaires from her 1999 School Portfolio and use them in the research.
- Trindade Nahara, in particular, for his support in preparing the research instruments;
- Many friends and colleagues who provided valuable support, suggestions, and criticism in the preparation of the present study and writing the report. Special thanks are addressed to the Directors of Education and Culture of participating provinces — Niassa, Sofala and Maputo City — for giving permission and support to undertake the research in schools under their jurisdiction; to colleagues from school inspectorate and to pedagogic supervisory bodies from Niassa, Sofala and Maputo City for kindly offering their services as volunteer research assistants to aid the process of data collection, to Flávio Magaya and his team from the computer section of INDE for data entry and processing.
- Carlos Lauchande, senior lecturer in Statistics at UP, for teaching me to use the Statistical Package for Social Sciences (SPSS 11.5) applied in this research;
- My friend, Professor Sozinho Matsinhe at UNISA, his wife and children for support given during my stay in Pretoria to make me feel at home.

I wish to acknowledge my Supervisor, Professor W J Fraser for supporting and guiding me tirelessly in producing this research report. My gratitude is also extended to his Secretary, Ms. Marieta Nieman for her invaluable support.

I would also like to thank my editor, Mr. Oswald Davies for working with me patiently chapter by chapter and paragraph by paragraph to eliminate any distortion of the research report.

Finally I would like to thank my family, especially my wife Natalina, my daughter Quita and my sons René and Junior for the encouragement and sustained support I received from them during completion of this research.

ABSTRACT

The purpose of this research was to trace the first year of progress made towards implementing the new curriculum for basic education in Mozambique and to gain clarity about the process with a view to formulating pertinent recommendations for its successful implementation.

This study starts by presenting background information which highlights the need for the curriculum to be more relevant to the sociopolitical changes in Mozambique as the main aim of transforming the basic education curriculum. Secondly, it maps out the national environment in which the new curriculum is operating and the critical factors justifying the changes brought by curriculum transformation. Then it introduces the research questions that essentially explore four issues, namely (1) the nature of the new curriculum and the strategy used to implement it, (2) the perceptions of educators, subject specialists and principals regarding the new curriculum, (3) classroom practices as envisaged in the new education curriculum and (4) efforts towards successful implementation of the new curriculum.

Before the research topic is addressed the precepts of curriculum theory and the principles of curriculum development are discussed as the context within which to conceptualize the implementation of the new curriculum in Mozambique.

The study under review explores the seven basic conditions for effective change identified by Giacquinta (1998). The researcher has found with due reference to the subject literature that the relevance of these conditions is borne out by the findings of the research under review. This research therefore has the merit that it relates these conditions (referred as factors in the study) to each other, thus serving as an important guide for monitoring and implementing education change of which curriculum reform is a basic element.

The study employed mainly quantitative analysis (descriptive statistical analysis and factor analysis) having as research instrument a survey questionnaire designed to gauge educators' and learners' opinions regarding implementation of the new Basic Education Curriculum in Mozambican schools.

As the main findings of the study, it was clear from participating principals' and teachers' responses that school leadership is an essential factor in assuring the presence and maintenance of all the necessary conditions for successful implementation of the new curriculum. The capacity building is another indispensable factor derived from participating principals' and teachers' responses concerning successful implementation of the new curriculum, which is viewed as an important condition for creating and maintaining teachers' confidence in their ability to fulfil new role expectations. In this regard, principals and teachers identified innovative classroom practices as an important condition for successful implementation of the new curriculum. So, principals' responses showed that it was important to recognise the association between leadership, innovative classroom practices and capacity building, while participating teachers' responses showed that there was an important link between capacity building and leadership, rewarding and innovative classroom practices. Thus, with the exception of rewarding the same factors were identified as critical by both principals and teachers.

A distinct enabling condition for successful implementation of the new curriculum that emerged from participating students' responses comprised (1) an association of students' expectations, learning opportunities and outcomes, (2) students' subject preferences, (3) and a friendly and supportive school environment.

This research both contributes to understanding of the curriculum implementation process, and enables the formulation of pertinent recommendations towards successful curriculum implementation. It also enriches the current literature on this matter through critical analysis of a new curriculum implementation, offering empirical evidences of the relevance of school resocialization, which entails restructuring and reculturing.



KEY WORDS

Curriculum

Curriculum approaches

Curricular areas

Curriculum development

Curriculum development models

Curriculum implementation

Curriculum theory

First-order investigative factor analysis

Frequency analysis

Integrated Basic Education Curriculum in Mozambique

“Intended”, “implemented” and “attained” curriculum

Learning cycle

Reliability

Resocialization

Restructuring, retiming and re-culturing

School leadership

Second-order confirmatory factor analysis

Semi-automatic progression

Validity

LIST OF ACRONYMS

BEC	Basic Education Curriculum
CFPPs	Primary Education Teacher Training Centres
CRESCER	Courses of school capacity building: Systematic, continuous, experimental and reflexives
DDE	District Education Office
DPE	Province Education Office
EFA	Education for all
ESSP	(Mozambique) Education Sector Strategic Plan
FRELIMO	Mozambique Liberation Front
GDP	Gross domestic product
IAP	National Institute of Teachers Upgrading
IMAP	Primary Teaching Institute
IMPs	Pedagogic Medium Institutes
INDE	National Institute of Educational Development
INE	National Institute of Statistics
ISD	Instructional systems design
KMO	Kaiser-Meyer-Olkin calculation
L2	Portuguese language
MEC	Ministry of Education and Culture
MINED	Ministry of Education
NGOs	Non- Government Organizations
PCEB	Curriculum Framework of Basic Education
SPSS	Statistical Package for Social Sciences
ZIP	Pedagogic Influence Zone: a cluster of schools in Mozambique
UEM	Eduardo Mondlane University
EFEPs	Schools for Training and Teacher Education
ISP	Pedagogic Higher Institute
UP	Pedagogic University

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CHAPTER 1

INTRODUCTION AND GENERAL ORIENTATION: PROBLEM STATEMENT, RESEARCH QUESTIONS AND AIM OF THE INVESTIGATION

1.1 INTRODUCTION

Contemporary dialogue on the essentials of successful education curriculum development elsewhere emphasizes the need to move away from the top-down policy making style towards a participatory process that involves practitioners and other stakeholders right from the planning stage. The argument is based on the fact that successful curriculum changes require a critical and collaborative approach that allows participants to own and control the process so as to reduce the unavoidable gap between theory and practice. This study set out to examine the implementation process of the new basic education curriculum in Mozambique in order to ascertain how the intended curriculum changes are being operationalized.

The purpose of this research was to trace the first year of progress made towards implementing the new curriculum for basic education in Mozambique and to gain clarity about the process with a view to formulating pertinent recommendations for its successful implementation. Thus, the study is justified by the need to corroborate the pertinence and validity of the aims and strategies upon which the new curriculum is grounded, pointing out the opportunities, weaknesses and strengths that will or will not aid effective implementation. As a result, the study offers to enrich the current literature on curriculum development and implementation, by enabling comparison of the empirical evidence with practical realities to ascertain the relevance of school resocialization in terms of restructuring and reculturing towards successful reform.

In particular this chapter provides a brief history of Mozambique's school curriculum proceeding from the colonial time through the period of transitional government up to and including the post-independence period. The chapter first highlights the critical context in which the new curriculum is being implemented then proceeds to the study's problem statement, its aims and objectives, and the critical research questions guiding the investigation. The chapter then elaborates on the theoretical

framework, providing a synthesis of the methodology applied and outlining the research conceptual framework or strategy devised for.

1.2 HISTORICAL BACKGROUND

As a former Portuguese colony Mozambique was subjected to a repressive system of indirect rule which, at the turn of the fifteenth century, established restricted settlement areas for natives along the shore of the Indian Ocean. Later, Portugal started the process of effective colonization of Mozambique during the nineteenth century, but their invasion and occupation nevertheless faced stiff resistance from several indigenous groups. This partly explains why effective colonization of Mozambique and the consolidation of military domination were only achieved in 1920. Meanwhile, Portugal continued to face an active rebellion against the occupation and its discriminatory policy. This resistance reached a climax with the creation of the Mozambique Liberation Front (FRELIMO) in 1962, involving all Mozambicans, regardless of race, sex, tribe, credo or place of birth. Having failed to achieve political independence through conciliatory negotiation, FRELIMO started the liberation struggle (1964-1974), with the Portuguese acknowledgement of Mozambique's right to rule itself as an independent state.

At independence in 1975 a one-party political system was adopted, which later became a multi-party political dispensation by virtue of the 1990 Constitution of Mozambique. Throughout this political history, the education curriculum went through a series of changes to reflect the changing socio-political and economic conditions. For example, during the colonial period Mozambique had a curriculum that typically followed the Portuguese model, naturally with a view to entrench colonial domination and not to promote the nation's culture and unity, nor to promote respect for human rights and, therefore, peace and stability (Bazilashe, Dhorsan and Tembe, 2004:216). Eduardo Mondlane, the first President of FRELIMO, strongly denounced this programme for colonial dominance in his book "Lutar por Moçambique"¹ (1977). After independence the Transitional Government of Mozambique (September 1974 - June 1975) held the famous "Beira Seminar", a landmark event at which the groundwork was laid for a major overhaul of the national curriculum. One of the

¹ The Struggle for Mozambique, third edition in Portuguese version, translated by Maria da Graça Forjaz, printed in Portugal in Livraria Sá da Costa Publishing House.

critical objectives of this revision was to give an enhanced Mozambican character to the curriculum, for example by representing the new sociopolitical and economic realities. A few years later the Beira Seminar revised curriculum as vehicle to accommodate the sociopolitical and economic realities of the day became too obvious to ignore, that is in 1983 the Government through the Ministry of Education introduced the new curriculum by passing the Education Act (Act 4 of 1983) which repealed the old colonial education system. The shift in 1990 to a multiparty democracy naturally resulted in changes in government institutions to suit the new dispensation. The educational changes were reflected by revising the Education Act (Act 4 of 1983) and by passing the new Education Act (Act 6 of 1992).

However, the adjustments made no essential difference to education until 1998 when the Government embarked on a long consultative process to formulate a new curriculum as imperative response to the sociopolitical changes that took place between 1983 and 1997.

Apparently there had always been a gap between the policymakers' intentions and policy implementation in the field: in other words, differences between theory and practice. The process of curriculum change was therefore critical and it was advisable for policymakers to change the top-down approach to policy-making by introducing a system that involves practitioners right from the planning stage and would reduce resistance to change. However, implementation remains far from a living reality because as Morris (2000) argues, the education policy is a result of the convergence of planned and unplanned factors rather than a holistic new exercise in rational planning and problem solving. As Giacquinta (1998:172) puts it "the implementation of a promising innovation is complex, time-consuming, and fraught with potential obstacles hard to anticipate or control".

In 1998 the Mozambique Government decided to embark on a long consultative process of creating a new curriculum for basic education. The Ministry of Education entrusted the National Institute of Educational Development (INDE) with the task of leading the process. Thus, INDE was mandated to act as coordinator of the process to ensure that the new curriculum was designed and developed on a consultative basis. A key element that was expected from the new curriculum was to be home-

grown and fully owned by Mozambican society as a whole. Duffy (1990) and Fullan (1993) aver that it is essential to ensure teacher ownership of curriculum for it to succeed. Therefore teacher participation in curriculum design is essential. Thus, in the course of preparation, INDE promoted open discussions about the structure and content of the curriculum. Various stakeholders such as teachers, parents, and several organizations were involved in these discussions. The resultant new curriculum for basic education was introduced in schools in the year 2004.

A critical issue in this regard is that Mozambique is not a culturally homogeneous country. The previous curriculum was, in many cases, indirectly conflicting with the non-formal education, which is still strong in the Mozambican communities. For example, the majority of the population do not speak Portuguese, but this is the language of instruction for all schools. Available data of the 1997 population census from National Institute of Statistics (INE) indicates that in a Mozambican Population of twelve million people only 6,4% of urban dwellers speak Portuguese as their mother tongue, in contrast to 1,2% in rural areas. Thirty-nine percent (39%) of the total population speak Portuguese as a second language. Also, the same data indicate that about 94% of the total Mozambican population speak Bantu Languages (Indigenous Languages). In rural areas, the daily interactions are conducted almost exclusively in these languages. These statistics have implications for the learning process, because it involves the majority of learners starting to learn in Portuguese language (L2), which is unfamiliar to them before entering school. In this regard, Cabral (1991) observed that students possessed a mental flexibility and curiosity, which was far superior to what was often attributed to them because of their inability to sufficiently master the L2. She emphasized that students had few opportunities to speak, to express their thoughts and reason, to use the L2 as an active tool of thought. Therefore, in classroom situations, the “communication” was restricted to asking students to respond to “yes/no” questions, or simply to repeat what the teacher said. Given this situation, the new curriculum introduced in 2004 allows learners to choose their home language or mother tongue as their medium of instruction while offering Portuguese as subject and not as medium of instruction for the first two grades.

Although a wide range of stakeholders are involved in the process of curriculum development, it remains apposite to note that the environment in which the curriculum is to be implemented is a critical factor for its success. Mozambique being a poor country with limited resources, characterized by cultural heterogeneity with people of mixed vernacular languages, the success of the curriculum will mainly depend on these factors, including the languages of instruction, the organization and structure of basic education, as well as the learning-teaching methodologies and evaluation adopted strategies. A careful and objective assessment is, therefore, a critical aid to identifying the strengths, weaknesses, opportunities and threats that may affect implementation of the new curriculum. As noted by Oers and Wardekker (1999:247):

we should redirect our efforts from curriculum development outside the schools towards the understanding of the curriculum being constructed in the classroom.

This study is therefore significant and could facilitate the formulation of pertinent proposals towards the effective implementation of the new curriculum in school years to come.

1.3 PROBLEM STATEMENT

The success in curriculum implementation relies on several factors such as school environment, availability of resources, teaching-learning methodologies, evaluation strategies, sociocultural setting, attitudes of learners, teachers and other stakeholders involved in the process. In this regard, Dorman (2006:2) points out that “the concept of environment, as applied to educational settings, refers to the atmosphere, ambience, tone, or climate that pervades the particular setting.” Freiberg and Stein (1999:11) argue that a conducive school climate creates “healthy learning places, nurtures children’s and parents’ dreams and aspirations, stimulates teachers’ creativity and enthusiasm, and elevates all its members”. Furthermore, Koul and Fisher (2006: 277) contend that:

Classroom learning environment dimensions are good indicators of teaching and learning process and their predictive power on a number

of learning outcomes points towards the possibility on improving students' outcomes through changing classroom environments.

The problem is that despite efforts at implementation, it is still not clear how the learners, educators, subject specialists and principals have perceived the new curriculum introduced in 2004. It also remains to be seen whether the school members are clear about the nature of the change, the reasons behind it and how it is supposed to be implemented. Above all, it is not yet known if the classroom practices that have been developed by educators really meet desired ends, and whether the schools receive the necessary support to implement the new curriculum. These are the critical issues that will determine the success of curriculum implementation and that have prompted this study, which sought to examine the status of the new curriculum of basic education in Mozambique in the early stages of implementation.

Several scholars and researchers such as Monyokolo and Potenza (1999) and Marsh and Willis (1999, 2003) contend that learning materials are a critical part of curriculum implementation. However, the mere use of learning materials does not in itself guarantee effective teaching and learning. Dorman (2006) emphasizes that only successful implementation of teaching strategies is likely to result in the establishment and maintenance of positive students attitudes to learning and consequently, to desirable achievement. Previously, Brown, Oke and Brown (1982) argued that it is the careful selection and skilful handling of instructional materials or learning resources by the teachers that renders them useful in facilitating teaching and learning. Appropriate assessment practices are also critical for successful curriculum implementation (Pahad, 1999; O'Leary, 2008). Lieberman (2001: 159) criticizes the negative trend that focuses on results, while underestimating the means employed to gain results. I quote:

In schools and politics emphasis is now being placed on results – often measured by standardized tests – without regard for the processes by which these results are gained. Change agents, who have to deal with the pressure of producing results, must find a process for getting there, and this process has to involve a progression of learning experiences. All this take time. Sometimes they shortchange the process to get to the results quickly, forgetting that adults, like children, learn at different rates and in different ways. Negotiating these differences demands constant attention to both the process and the results.

Marsh and Willis (1999:268; 2003:277) endorse the assertion by Lieberman (2001) regarding assessment or evaluation:

Curriculum evaluation includes studying how teachers and students interact with each other and with a curriculum or syllabus in a particular setting. It is not confined to investigating only what students have learned or to analyzing lessons plans. Rather, curriculum evaluation can involve examination of the goals, rationale, and structure of both the planned and the enacted curriculum; a study of the context in which the enacted curriculum occurs (including inputs from parents and the community); and an analysis of the interests, motivations, reactions, and achievements of the students experiencing the curriculum.

Further to the need for assessment to improve learning practice, Macdonald (2006:3) holds that for successful curriculum implementation “emphasis on learning and development and not just making judgments” is required.

The critical role of sociocultural setting in curriculum implementation is endorsed by Lovat and Smith (2003:3):

We are not hermits. Each of us is born and lives in a culture and a society. We cannot live alone. We depend upon other people to satisfy many of our needs and wants. We are dependent upon, and influenced by, many institutions in our society such as: the family; a variety of social, recreational and work groups; financial, commercial, educational and industrial organizations; religious organizations; and, the media.

This explains why curriculum implementation is regarded as “a process through which cultural subjectivities emerge” (Schostak, 2000:39). Furthermore, according to Hall and Hord (2001:15), a school as a unit of change has two important dimensions that affect efforts at change made by individuals and the organization. The first is made up of the physical features, such as size and layout of the facility, as well as the school’s resources, policies, structures and schedules. The second comprises the people factors, which include the attitudes, beliefs, and values of the individuals involved, as well as the relationships and norms that guide the individuals’ behaviour. By extension, therefore, it follows that feelings and perceptions are also critical in this regard, as noted by Lovat and Smith (2003:194) in their contention that:

Change is about challenging and facing perceptions and beliefs about self and about one's capacities, competencies and characteristics. As such, it can be pretty scary. If the feelings are not dealt with, then the change is unlikely to last for very long.

In the same vein, Bernhardt (1999:80) emphasizes that:

Values and beliefs influence how teachers teach and their expectations and feelings for children. Basically, humans will not act in ways different from their values and beliefs. They are the shaping force behind the vision.

Regarding students in general, they are more likely to make the effort to learn if they are motivated by a genuine desire to acquire knowledge (Slavin, 1989). Furthermore, the involvement of stakeholders such as parents and organizations in school life helps to ensure that a strong supportive relationship of trust exists for purposes of improving teaching and learning (Lieberman, 2001; Schubert, 2005).

Successful curriculum implementation requires adequate financial resources to support the process. However, Mozambique being a poor country which is highly dependent on foreign aid, its policy implementation often faces serious resource limitations. Bazilashe, Dhorsan and Tembe (2004) observe that the country still depends extensively on external assistance (55-60% of the overall budget), which is essentially an untenable situation that will have to change in due course. Secondly, as noted by Castiano, Ngoenha and Berthoud (2005), Mozambique is a complex mosaic of cultures and politically a "national" project, which has implications for perceptions of a new curriculum and for its successful implementation.

To reiterate, the main object of the investigation under review was to determine the extent and effectiveness of implementation of the new curriculum for basic education in Mozambique, particularly with a view to establishing its conformity to participatory requirements of the various school stakeholders, such as learners, teachers, parents and community members. A critical factor to consider in this regard is the impact of school leadership, with particular reference to teacher development, as factor that promotes curriculum change. The extent and effectiveness of external school support was also assessed to gauge the positive impact on curriculum change of that factor. Marsh and Willis (1999:238, 2003:247) rightly maintain in this regard that "however

much curriculum implementation is conceived, it is rarely fully successful on a large scale unless it receives support.”

1.4 RESEARCH QUESTIONS

The central question embedded in the earlier presentation of the background to the study and the articulation of the research problem is the following: *What are the factors on which successful implementation of the new basic education curriculum in Mozambique is critically dependent, and to what extent are these factors in place as required?* The following subquestions, derived from the main research question, were formulated towards addressing that question:

- What is the nature of the new curriculum and to what extent does it prescribe its implementation?
- What are the perceptions of learners, educators, subject specialists and principals regarding the new curriculum?
- How does the new curriculum find expression in the classroom practices of educators?
- What efforts are being made towards successful implementation of the new curriculum?

In response to these questions this study sought to trace the first year of progress made towards implementing the new curriculum for basic education in Mozambique, to which end particular attention was focused on classroom practices, overall school conditions, and the influence of endogenous and exogenous school factors on implementation.

1.5 AIMS AND OBJECTIVES OF THE INVESTIGATION

As stated above, the aim of this research was to trace the first year of progress made towards implementing the new curriculum for basic education in Mozambique, mainly with a view to contributing to the understanding of the process, enabling the formulation of pertinent recommendations towards assisting and achieving successful implementation, as well as to enrich the current literature on this matter by

offering empirical evidence on the relevance of school resocialization in terms of restructuring and reculturing towards successful reform.

Again, as noted above, special attention was focused on **classroom practices** as a means to promote change in the basic education curriculum, **overall school conditions** and the influence of endogenous and exogenous **school factors** on curriculum implementation.

Without prejudice to the above aims and objectives, but indeed with a view to realizing them, the first year of progress towards implementing the new curriculum was investigated with the recognition of the critical importance of policy implementation as the principal means of realizing any organization's objectives. In this regard consider the following from Giacquinta (1998:172-170):

Research shows that: (1) Implementation is, in its own right, a separate and problematic stage of any planned change effort; (2) successful implementation is the result over time of a combination of volatile forces, and not just the result of overcoming or avoiding initial resistance; and (3) since the appearance of change often masks what is really happening in a setting, one effective way to get behind appearances is to define the innovation sociologically and, then, observe in depth the extent to which the essential patterns of interaction (new role expectations) are actually occurring.

The object of the theoretical framework developed in the next section and illustrated in Figure 1.1 (Page 19) was to address the research questions by working towards the stated aims and objectives.

1.6 THEORETICAL FRAMEWORK

This study is underpinned by a theoretical orientation that upholds the relationship of seven basic contextual conditions for effective change and, in particular, for successful curriculum implementation (Giacquinta, 1998: 172-173):

- Clarity among members about and identification with new goals and role expectations;
- Ability of members to fulfill the new role expectations;
- Availability of adequate resources;
- Compatible organizational or social envelope for innovation;
- Deliberate process of role resocialization, and considerable

- Time, coordination, support, and encouragement; as well as
- School leadership in assuring the presence and maintenance of these conditions.

This conceptual framework (the researcher's own synthesis of the foundation drawn from various paradigms and theoretical frameworks) was adopted by the researcher in light of the fact that implementation of the new curriculum is within the scope of school improvement efforts (see the figure 1.1). Therefore, as Bernhardt (1999:15) points out, the investigation of progress made towards implementing the new curriculum should *be focused on what is important - the students*, since "the purpose of systematic school improvement is to improve the preparation of students – the primary clients of the school, and to rebuild the school organization to serve students' needs." So, in light of the literature review and practical pedagogical experience, the researcher considered appropriate to start by briefly interpreting and elaborating on the seven basic conditions for effective change identified by Giacquinta (1998) as follows:

1.6.1 Regarding clarity among members about and identification with new goals and role expectations factor

Firstly, the object was to find out if everyone is well informed about the aims, ends, contents, approaches or strategies of the change process (Burton, Middlewood & Blatchford, 2001: 19). This is in line with Spady (1994: 15) who observes that "clarity of focus and high expectations clearly define what is expected of students". Therefore, Malcolm (1999:110) makes a relevant point stating that a "clear vision of the curriculum in action and good documents are a first step (whether at the school level or the national level)" towards successful curriculum implementation.

Each member had to know exactly what to do in order to realize the envisaged change as a whole introduced by new curriculum. More specifically in the school context, school members, especially teachers, students and their parents had to be familiar with the curriculum goals and how to achieve them. In this regard Lovat and Smith (2003:212) note: "if the teacher is not clear about the nature of the change, the reasons behind it and how it is supposed to be implemented, and more important, if the teacher is not committed to the change, then there is little chance that it will be implemented."

Members had to be aware of the high expectations and the goals set in the curriculum as objectives for them to pursue. According to Spady (1994:16), “high expectations imply a desire to have students perform at higher levels, and working with them to increase the likelihood that it happens”.

Secondly, the objective was to determine whether members identified themselves with and readily accepted new aims, ends, contents, approaches or strategies involved in the change process and had the commitment and confidence to give practical substance to these elements of the envisaged change by taking individual initiative and collaborating with others. The further object in this regard was to determine specifically whether members identified themselves with the process and had the commitment and confidence to bring about the change.

In this regard, Marsh and Willis (1999:166), echoing Rogers and Shoemaker (1971) highlight the aforementioned basic condition in relation to two attributes:

1. *Relative advantage*: the degree to which an innovation is perceived to be better than the idea it supersedes.
2. *Compatibility*: the degree to which an innovation is perceived as being consistent with existing values and practices.

In this connection, Freidus, Grose and McNamara (2001:58), restating the research finding of several scholars such as Fullan (1993); Hargraves (1996); and McLaughlin (1991), emphasize that:

reform success is contingent not only upon the sincere commitment of teachers and administrators, but also upon the knowledge and skills they bring, their willingness to learn and implement new practices, and the opportunities available to explore what they know and need to know.

Thus, *clarity among members about and identification with new goals and role is a fundamental condition for successful curriculum implementation for reasons pointed out by Spady (1994:11):*

First, clarity of focus helps educators establish a clear picture of the learning they want students to exhibit in a performance demonstration. Second, student success on this demonstration becomes the top priority for instructional planning and student assessment. Third, the

clear picture of the desired outcome is the starting point for curriculum, instruction, and assessment planning and implementation, all of which must perfectly match (or align with) the targeted outcome. And fourth, the instructional process in the classroom begins with the teacher sharing, explaining, and modeling the outcome on day one and continually thereafter, so that the “no surprises” philosophy of OBE can be fully realized. This enables students and their teachers to work together as partners toward achieving a visible and clear goal.

1.6.2 Concerning members’ ability to fulfil the new role expectations

It is imperative to assess members’ capability, characterized by the skill, knowledge and experience needed to carry out new responsibilities, as well as their availability to fulfil their role in the change process (See figure 1.1). Considerations that are critical for curriculum implementation at school level include the following:

- The teachers’ background or collaboration among teachers are prerequisites for mastery of the new curriculum, just as the necessary knowledge, skills and confidence are prerequisites for its implementation. In this regard, Brown, Oke and Brown (1982) hold that teachers can only succeed in the process of curriculum implementation if they have a mastery of the assigned subjects that they have to teach and a good general knowledge, as well as transformative sensitivity.
- Teachers as individuals or collectively made efforts to increase their competency and cultivated good pedagogical practice. Grose (2001:78) argues that “the professional development of teachers is a critical component of educational reform processes”.
- The students’ commitment towards meeting the requirements of the new curriculum must be evidenced by this individual work and their support for each other, beyond teachers’ guidance. It is assumed that “learning is at the heart of school reform” (Richert, Stoddard & Kass, 2001: 138).
- Full-time commitment from teachers translated into effective self-evaluative teaching and learning experiences towards that are conducive to improving pedagogical practices (Khine & Lourdsamy, 2006).

- Consistent students' attendance and a highly developed sense of discipline (only the strong reason leads to student class absence). This discipline is understood in the context of constructivist learning environment, which often is misinterpreted as out of control learning atmosphere. In this regard, De Vries and Zan (2001:113-114) stress that:

While constructivist classrooms do tend to be noisier and more active than traditional classrooms, constructivist classrooms are not out of control, and constructivist teachers are not passive about classroom management. They are highly active in their efforts to facilitate children's self-regulation. Their activity, however, does not take unilateral forms of training, drilling, or punishing. Rather, it takes cooperative forms to enable children to construct convictions and follow their own social and moral rules that are independent of adult coercion.

1.6.3 Regarding the presence of adequate resources

The availability of necessary materials deserves particular attention (See figure 1.1). Monyokolo and Potenza (1999:243) assert that "in order for the new curriculum to be successfully implemented, every learner should receive a textbook for each learning programme under study." Similarly, Mahomed (1999:165) holds that "teachers need to be made aware of and encouraged to use creatively whatever is available, and to access other resources skillfully." However, it is imperative to ensure that management and resources are translated into effective learning. Mingat (2005:137) rightly remarks:

the process by which resources are transformed into learning has an impact that is three to five times greater than the volume and distribution of the resources per se. This clearly underlines the fact that any strategy aiming to improve the quality of instruction should consider substantial improvements in the managerial of this transformation of resources into results at the school level.

1.6.4 About a compatible organizational or social envelope for innovation

The enabling conditions for change include the following: the establishment of leadership that will ensure shared vision, support, assistance, mastery and motivation, especially commitment and stabilization for all members; and the establishment and use of feedback mechanisms to overcome the barriers that arise in the change implementation process towards expected goals (Fullan, 2001 &

Gough, 2002). Indeed, as Schubert (2005:64) points out “improved school management and organization is essential to support teacher capacity to implement change”. Furthermore, Neagley and Evans (1967:104) rightly note that:

The curriculum is greatly influenced, for better or worse, by the organizational pattern of the school. A good curriculum can blossom into an excellent one if the organizational pattern facilitates it; however, the same curriculum can be mediocre, and even poor, if the organizational pattern is permitted to get in its way.

1.6.5 On the planned process of role resocialization

It is necessary to cultivate new relationships among members that will support change implementation as well as prevailing organizational conditions. To this resocialization should be partitioned into its component parts which are *restructuring*, *retiming* and *re-culturing* of institutions undergoing changes, especially schools (See figure 1.1).

Restructuring entails reconfigured organization (See figure 1.1). In this regard McCallister (2001:55) aptly remarks that “unless organizational structures are changed to promote collegial learning, reforms are likely to fail. Richert, Stoddard and Kass (2001:138-139) argue that, “if a school (including a school of higher education) is a learning organization, it will have the capacity to change, to meet the changing needs and demands of its constituents”.

Reculturing is the process of developing new values, beliefs and norms, and reconceptualized professionalism, all with a view to facilitating and expediting change. Fullan (2001: 44) calls reculturing to the process of “transforming the culture — changing the way we do things around here”. Moreover, Fullan (2001) emphasizes that reculturing activates and deepens moral purpose, which stimulates collaborative work cultures, promoting respect for differences and permanently constructing and testing knowledge against measurable results, thereby “producing the capacity to seek, critically assess, and selectively incorporate new ideas and practices — all the time, inside the organization as well as outside it (Fullan, 2001:44)”. In this regard, one realizes that sometimes the disequilibrium moment is a privileged occasion for learning. Hence, successful leaders need energy,

enthusiasm, and hope. Indeed, as Day and Kington (2008:8), aver: “change affects not only teachers’ work, but also how teachers feel about their work. There is an unavoidable interrelationship between cognitive and emotional identities”. Moreover, Day and Kington (2008:9) emphasize that “identity is the way we make sense of ourselves to ourselves and the image of ourselves that we present to others. It is culturally embedded. There is an unavoidable interrelationship, also, between the professional and the personal”. In this regard, equally, Hameyer (1991) noted earlier that “curriculum is a matter of interpersonal relations and interactions which should be guided by the common criteria of discourse or deliberative understanding”

Retiming involves the ensuring of proper and rationalized use of available time, envisaging the optimal fulfillment of changing goals. In this context, Mingat (2005:114) avers that “(i) time spent in school is a fundamental ingredient for learning, and (ii) the productivity of this time can vary greatly depending on how efficiently it is used.” This argument is endorsed by Fullan (1998:226) in connection with curriculum change:

We need especially to ‘reculture’, and ‘retime’ as well as ‘restructure’ schools. Restructuring is commonplace and all it does is alter the timetable or formal roles. Reculturing transforms the habits, skills and practices of educators and others toward greater professional community which focuses on what students are learning and what actions should be taken to improve the situation. Retiming tackles the question of how time can be used more resourcefully for both teachers and students. Reculturing and retiming should drive restructuring because we already know that they make a huge difference on learning, although they are very difficult to change.

1.6.6 Concerning considerable time, coordination, support, and encouragement

It is necessary to explore the extent to which these aspects are translated into shared vision, high expectations, strong commitment and ability as prerequisites for new goals, with specific reference to goals relating to the new curriculum (See figure 1.1). According to Lovat and Smith (2003:206), “one of most important aspects of developing effective change in schools is to foster strategies that will result in collaboration, co-operation, communication and understanding that can build group cohesion.” Furthermore, Lovat and Smith (2003) point out that organizations such as

schools operate on a “presumed consensus”, based in the apparent shared perceptions, beliefs and language used by the members of the school. Therefore, self-reflectivity and collective critical reflection coached by the school leadership are essential to ensure “new consensus” towards successful implementation of the new curriculum. Previously, Neagley and Evans (1967) and Fullan (2001) argued that on the one hand the *key to success* resides in coordination, in improving relationships, in creating and sharing knowledge, and in the direction of all forces and processes which potentially influence the curriculum innovation. On the other hand, it is embedded in marshalling of all resources — national and regional— into a coherent and substantial model of support for the local school.

1.6.7 Regarding school leadership

According to Lumby (2001), it is necessary to examine the efforts to create an environment that enables true sharing of the decision making process, community participation, better use of government support or of external contribution, putting in place the consensual plan, adequate support for members, and provision of resources, all of which depend on effective communication (See Figure 1.1). This aim is in line with Fullan’s (2001:4) concept of effective leadership. I quote:

Leadership, if it is to be effective has to; (1) have an explicit “making-a-difference” sense of purpose, (2) use strategies that mobilize many people to tackle tough problems, (3) be held accountable by measured and datable indicators of success, and (4) be ultimately assessed by the extent to which it awakens people’s intrinsic commitment, which is none other than the mobilizing of everyone’s sense of moral purpose.²

As Burton, Middlewood and Blatchford (2001:20) emphasize, the ownership of the vision by all those involved in the curriculum transformation is critical for effective implementation and much of that ownership results from the “ability of the leader to align the vision with the needs, hopes and aspirations of the stakeholders”. In this regard, Neagley and Evans (1967:19) state that “leadership is an essential ingredient in the improvement of instruction and is defined as that action which facilitates the achievement of objectives identified by the people involved.” Referring particularly to

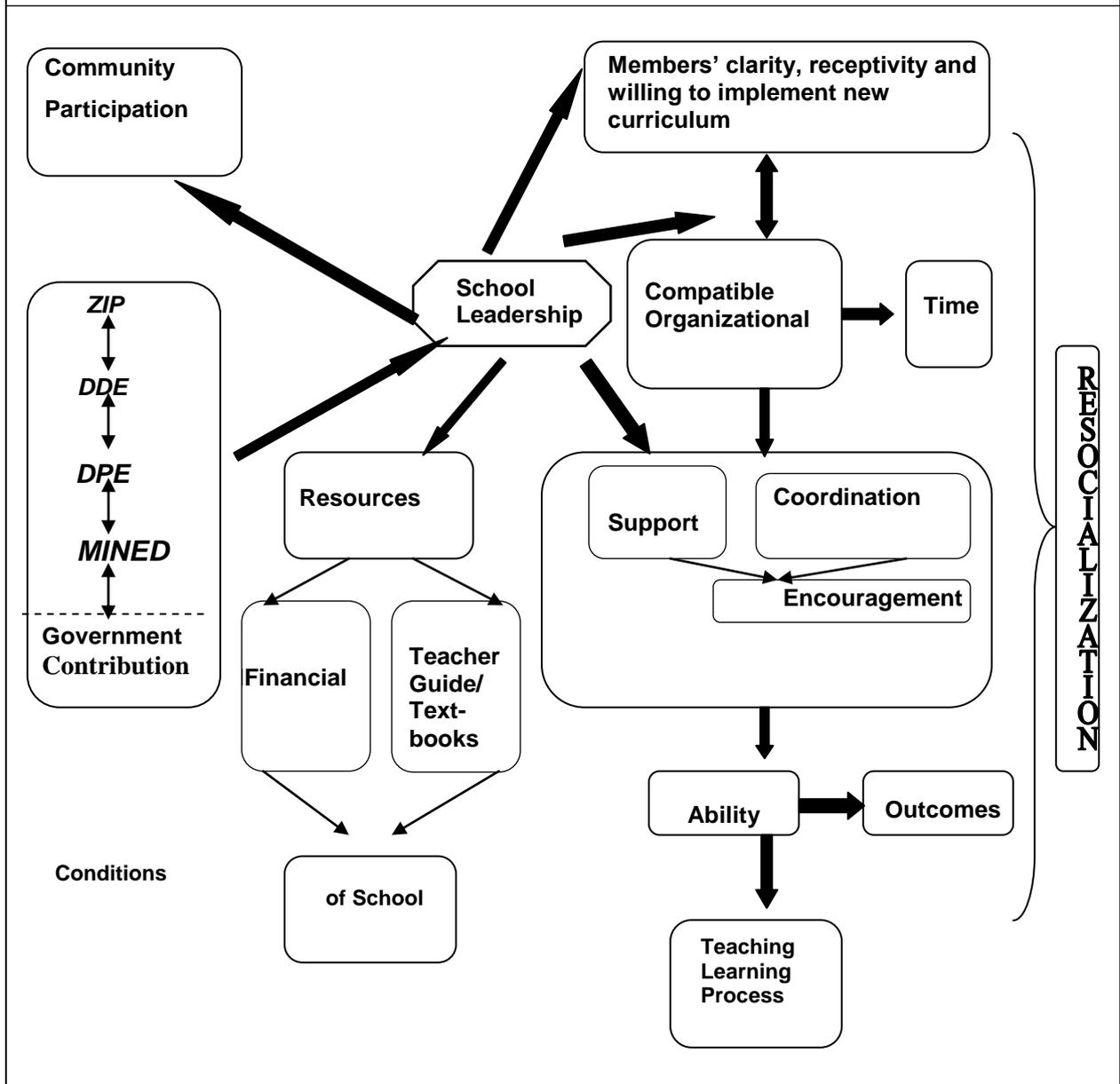
² Moral purpose is about ends and means, ie. authentic leaders display character, and character is the defining characteristics of authentic leadership (Fullan, 2001:4)

the importance of the school principal leadership role, Marsh and Willis (1999:197) underscore that:

Numerous research studies point to the leadership of the principal as critical to constructive curriculum change in individual schools. Yet the principal must often walk a fine line between encouraging collaborative curriculum planning and attempting to dominate the process.

The seven basic contextual conditions for successful change, as discussed above, are clearly relevant to this study, since they can provide the basis for monitoring and evaluation of the process of implementing the new basic education curriculum in Mozambique. These conditions are represented in a synoptic structure of the theoretical framework in figure 1.1.

Figure 1.1: Hypothetical Interrelationship of Factors for Effective Implementation of a new basic education curriculum in Mozambique (after Giacquinta, 1998: 172-173)



ZIP-Pedagogic Influence Zone: a cluster of schools in Mozambique; DDE: District Education Office; DPE: Province Education Office; MINED: Ministry of Education

Figure 1.1 shows how the government contribution, namely through ZIP (Pedagogic Influence Zone, a cluster of schools in Mozambique), DDE (District Education Office), DPE (Province Education Office) and MINED (Ministry of Education) ensures external support for the role of school leadership in ensuring effective implementation of the process of curriculum change. Figure 1.1 also illustrates the decisive function of school leadership in the process of school resocialization towards successful implementation of the new curriculum as described in section 1.6.5. It equally highlights the context in

which the curriculum change is operating. Hall and Hord (2001:15) summarize the context of the school as an agent in the process of change as follows:

Considering the school as the unit of change, we can think of it as having two important dimensions that affect individuals' and the organization's change efforts: the physical features, such as the size and arrangement of the facility, and the resources, policies, structures and schedules that shape the staff's work; and the people factors, which include the attitudes, beliefs, and values of the individuals involved as well as the relationships and norms that guide the individuals' behavior.

In effect, the context in which the curriculum change is undertaken is essentially determined both by internal and external factors. The internal factors include facilitating conditions within the school as the unit of change. The external factors refer to support as indicated. A detailed theoretical discussion of contextual conditions is contained in chapter two, section 2.5.2, concerning *phases of curriculum development*, specifically in sub-section c, which deals with curriculum implementation.

The framework, reflected by Figure 1.1, was explored by using an appropriate questionnaire(*cf.* in section 1.7), ascertaining the obtained results in the light of finds encapsulated in relevant literature on curriculum change implementation.

1.7 RESEARCH METHODOLOGY APPLIED DURING THE INVESTIGATION

A quantitative research method based on a survey of educators' and learners' opinions regarding curriculum implementation in Mozambican schools was mainly used in this study. The quantitative instrument employed consisted of items adapted from Bernhardt's (1999) survey questionnaires, to which end, naturally, the researcher obtained the copyright permission from Dr. Victoria L. Bernhardt. The research also involved a review of reports produced by INDE (National Institute for Educational Development) concerning monitoring and supervision of the new basic education curriculum, including official documents yielded by the Ministry of Education and Culture, specifically by the Directorate of Planning and International Cooperation.

The investigation was based on a national sample taken from three provinces, well isolated from each other, namely, Niassa to the north, Sofala to the centre, and

Maputo City in the south. It was necessary, of course, to ensure that the sample was large enough, involving a reasonable number of participants in proportion to the population of each target group: principals, teachers and learners of schools teaching grade 6. Accordingly, the questionnaire was administered to a sample of 3 050 respondents of which 124 were principals, 221 teachers and 2 705 learners. Due to the magnitude of the study, the researcher has benefited from the support of colleagues at the school inspectorate and pedagogic supervision at provincial level. These colleagues kindly offered their services as volunteer research assistants to aid the process of data collection. The researcher personally distributed the survey forms, including a covering letter, to each team of research assistants in each of the selected provinces. The survey forms were completed by appointment as arranged between the research assistants and the principals of relevant schools. The research assistants collected the completed forms immediately after the survey and placed them in envelopes indicating the province, school and the category of respondents (principals, teachers or learners) in each case. The Chief - Inspector at provincial level returned the forms to the researcher once the schools in the relevant provinces had completed the data collection task.

The analysis of data commenced with a simple descriptive and frequency analysis of the responses, which was followed by a factor analysis. The Statistical Package for Social Sciences (SPSS 11.5) was used in both instances. Further particulars of the research methodology are given in chapter four of the present report.

1.8 CLARIFICATION OF TERMS AND CONCEPTS

All appropriate terms and concepts will be discussed and dealt with in the following chapters.

1.9 OUTLINE OF RESEARCH AND TIMEFRAME

The research report was outlined, including the title with subsequent chapters, as follows:

Title: The Implementation of the New Basic Education Curriculum in Mozambican Schools

- Chapter 1: Introduction and general orientation
- Chapter 2: Curriculum theory, curriculum development and curriculum implementation
- Chapter 3: The structure, nature and introduction of the new basic education curriculum in Mozambique
- Chapter 4: Research strategies and techniques applied during the investigation
- Chapter 5: Data analysis of the empirical investigation
- Chapter 6: Analysis and discussion of results
- Chapter 7: Summary of the results, discussion, recommendations and implications
- Bibliography
- Appendices

1.10 SUMMARY

Chapter one provided a brief outline of the history of Mozambique's school curriculum, extending from colonial times, through the period of transitional government after independence, followed by the post-independence period up to the present. The chapter first reviewed the critical context in which the new curriculum is being implemented, then proceeded to the problem statement, the aims and objectives, and the critical research questions of the study. Chapter one concluded with a discussion of the theoretical framework, a synthesis of the methodology applied, and an outline of the conceptual framework or strategy devised for the research.

The next chapter provides a theoretical exposition on the curriculum concept, the nature and function of curriculum, curriculum development as a concept, the phases of curriculum development (curriculum design, curriculum dissemination, curriculum implementation and curriculum evaluation); and curriculum development models. The purpose of this chapter is to offer theoretical background particularly with a view to shedding light on the nature of the new basic education curriculum in Mozambique and the projected implementation benchmarks.

CHAPTER 2

CURRICULUM THEORY, CURRICULUM DEVELOPMENT AND CURRICULUM IMPLEMENTATION

2.1 INTRODUCTION

It is normal to discuss curriculum matters, and especially curriculum implementation, without considering the complexities concerned. In Mozambique, for instance, it is widely held that students' poor academic performance is caused by shortcomings in the curriculum when the fault should in fact be sought in the *teaching-learning process*, which is merely a part of curriculum. Macdonald (2006:4) observes that "...a lot of attention is paid to the outcomes or results of our activities in terms of student results, less energy is expended in finding out how well we carry them out". As Hameyer (2003) noted, the quality of a curriculum can only be as good as the quality of the curriculum process, depending on the self-renewing capacity of the individual school. Likewise, Lovat and Smith (2003:74) emphasize that "student achievement can only be enhanced when the nature of the pedagogy required is targeted with precision and implemented with rigour, and with assessment for outcomes that is in tune with the entire process." Therefore, Glatthorn, Boschee and Whitehead (2006:73) point out that it "is essential to develop a fundamental understanding of curriculum theory by the providing the tools necessary when analyzing curriculum proposals, illuminating practice, and guiding reform."

In effect, three distinct levels, perspectives or representations, namely, "intended", "implemented" and "attained" curriculum are often confused in a way that it is easily and superficially concluded from the outset of the initiative that the curriculum change, which is innovation, is doomed to failure. As Lovat and Smith (2003:133) point out, "the truth is that good curriculum is theory-and-development, planning and practice, as one. When we opt for one against the other, we do damage to good learning." Indeed, it is essential for a critical analysis of curriculum implementation to proceed with due deference to this observation.

It follows, therefore, that all curriculum approaches (e.g. behavioural, managerial, systems, academic, humanistic and reconceptualists) must be given their due in

overall curriculum development, and curriculum theory must guide all curriculum activities (Zais, 1976; Marsh, 2004). In light of the above, this chapter is intended to raise awareness of the curriculum in concept and the perspectives and approaches that serve as criteria for curriculum evaluation, with particular reference to curriculum theory and curriculum development.

Thus, accurate analysis and understanding of curriculum implementation is made possible by taking due account of the curriculum concept, the perspectives on and approaches to school curriculum, and curriculum theory and development. That is, before we deal with issues about curriculum implementation in Mozambique, it is worth addressing questions about the purpose and nature of curriculum. Incidentally, Ornstein and Hunkins (1993:184) aver that theoretical perspectives may allow us “to bring to bear our repertoire of habits, and even more important, to modify habits or discard them altogether, replacing new ones as the situation demands”. Therefore, the purpose of this chapter is to provide a theoretical background in order to shed light on the nature of the new basic education curriculum in Mozambique and the means required for its successful implementation, to be considered in detail in chapter 3.

So, based on theoretical background incorporated into chapter two, compared with the new curriculum development approach of basic education in Mozambique presented in chapter three, the findings reported in chapter five are critically analysed and discussed in chapter six. Finally, the conclusions, recommendations and implications covered by chapter seven are substantiated.

It will be seen from the discussion of theoretical background that as Posner (2004:4) asserts, “there is no panacea in education and it is reflective eclecticism that is at the heart of curriculum study.” In the same vein, Doll Jr (2002:45) avers that curriculum is currently understood as “a process or method of ‘negotiating passages’- between ourselves and the text³, between ourselves and the students, and among all three.” It is hoped that the background discussed here will serve as adequate preparation for a

³ According to Pinar et al. (1995:48), the term text (discourse) is used “to focus on the language of the field, that is, the scholarly production of the field, to insist the field is its scholarly production. The concept of text implies both a specific piece of writing and, much more broadly, social reality itself.”

critical appraisal of the process of implementing the new basic education curriculum in Mozambique.

2.2 THE CURRICULUM CONCEPT

According to Smith (1996, 2000:1) “the idea of curriculum is hardly new - but the way we understand and theorize it has altered over the years — and there remains considerable dispute as to meaning”. Therefore, *defining the word curriculum is no easy matter* (Marsh & Willis, 2003:7). It consists of disjunct or fragmentary parts. Ornstein and Hunkins (1993:1) aptly note that “curriculum as a field of study is elusive and fragmentary, and what it is supposed to entail is open to a good deal of debate and even misunderstanding.” Lovat and Smith (2003:6) confirm that:

The word (curriculum) itself is used in many different contexts, by principals in schools, by teachers, by curriculum writers in education systems, and increasingly by politicians. It can mean different things in each of these contexts.

In fact, definitions of curriculum abound in the literature, in various autonomous discourses using key terms in complex and even in contradictory ways (Pinar et al., 1995). The core meaning of curriculum is embodied in its Latin derivation from a “course” or “track to be followed”. Marsh and Stafford (1988:2) confirm that “the word *curriculum* comes from the Latin root meaning “racecourse” and, for many, the school curriculum is just that — a race to be run, a series of obstacles or hurdles (subjects) to be passed.” Marsh and Stafford (1988) highlight three dimensions of curriculum concept. First, they explicit that curriculum includes not only syllabi or listing of contents, but also a detailed analysis of other elements such as aims and objectives, learning experiences and evaluation as well as recommendations for interrelating them for optimal effect. Second, “curriculum” comprises planned or intended learning, calling attention to unexpected situations which necessarily may occur in the classroom practices. Third, curriculum and instruction are inextricable. Lovat and Smith (2003:16) rightly contend that “curriculum is part of teaching, not separate from it.” Therefore, the most agreed basic notion of the curriculum is that it refers to **a plan for learning** (Todd 1965; Neagley & Evans, 1967; Zais 1976, Marsh & Stafford, 1988; Van den Akker, Kuiper & Hameyer, 2003 and Lovat & Smith, 2003). This concept of curriculum as (cf. Van den Akker 2003:2) “limits itself to the core of all

definitions, permitting all sorts of elaborations for specific educational levels, contexts, and representations.” Discussing this curriculum concept, Marsh and Stafford (1988:4) argue that curriculum is “an interrelated set of plans and experiences which a student completes under the guidance of the school.” Furthermore, Marsh and Stafford (1988:4-5) clarify the comprehensiveness of this definition as follows:

- The phrase, “interrelated set of plans and experiences” refers to the point that curricula which are implemented in schools are typically planned in advance but, almost inevitably, unplanned activities also occur.
- The phrase “which a student completes under the guidance of the school” is included to emphasise the time element of every curriculum.
- “Under the guidance of the school” refers to all persons associated with the school who might have had some input into planning a curriculum and might normally include teachers, school councils and external specialists such as advisory teachers.

Strikingly, in line with this curriculum concept, an encapsulated definition was given earlier by Richmond (1971:87), who stated that “curriculum is a ‘slippery’ word, meaning in the broadest sense the ‘educative process as a whole’ and, in the narrowest sense, ‘synonymous with the syllabus, a scheme of work, or simple subjects.’”

However, as Lovat and Smith (2003) point out, the main concern is not to arrive at a specific definition of ‘curriculum’; rather it is to be aware that:

- Curriculum means different things to different people; it is therefore important to consider the context in which the term is used.
- The meaning attributed to the word ‘curriculum’ is associated with particular ideology or set of beliefs about education and the world.
- A number of issues and concerns that are central to the nature of curriculum work itself are suggested by different usages and meanings of the term ‘curriculum’.

Incidentally, Middlewood and Burton (2000: xi) make the relevant point that:

“Debate about the meaning of ‘curriculum’ is destined to continue, but deciding upon a precise meaning is unimportant compared with ensuring that the learning experiences of children, young people and adults in individual schools and colleges are of the highest order of the appropriate purpose.”

Thus, curriculum may be looked at from different perspectives and approaches, which should be clarified if the process of curriculum change is to be understood. According to Van den Akker (2003), a basic analysis concerning curriculum improvement comprises three distinct levels, perspectives or representations, namely: “intended”, “implemented” and “attained” curriculum.

In fact, the three salient characteristics of curriculum as stated tend to be modulated by perspective. Nevertheless, they are intrinsically connected to the extent that curriculum implementation cannot be considered without account of the “intended” as well as the “attained” curriculum. I realize that the said three aspects of curriculum constitute a chain with strong links that cannot be ignored in a critical appraisal of curriculum change; hence it is deemed necessary to revisit them to clarify the purpose and direction of the research in hand.

The intended or planned curriculum comprises the ideal or abstractly conceptual curriculum and the formal or written curriculum (Goodlad 1979; Saylor, Alexander & Lewis 1981; Marsh & Willis 1999; Hameyer 2003). The ideal curriculum is the vision, including information that presents an overview (bird’s-eye view) of “why”, “when”, “how” and “what” is supposed to be taught and learned. It is the rationale, the basic philosophy or the epistemological base underpinning the curriculum. The formal, written curriculum covers the practicalities of “why”, “when”, “how” and “what” as expressed, for example, in curriculum documents, syllabi, or in school resources such as textbooks and other materials. Posner (2004) refers to it as the official curriculum. How curriculum is implemented depends on users’ perceptions and, therefore, how they are influenced by the implementation, which is the actual process of teaching and learning (the enacted curriculum — Marsh & Willis 1999; the operational curriculum — Hameyer 2003; the observed curriculum — Saylor, Alexander and Lewis 1981). It is the real curriculum, the curriculum-in-action, for

example, how the official curriculum is translated into classroom practices. The users whose perceptions/interpretations of curriculum implementation depend on their various viewpoints are the students or parents (the perceived curriculum — Hameyer 2003 or the experienced curriculum — Marsh & Willis 1999) and the teachers whose influence takes pride of place. Users' views greatly determine how implementation is effected. In other words it is a reciprocal process — users' views are influenced by, and in turn exert influence on implementation.

The attained curriculum has a twofold meaning: it comprises an experiential and learned curriculum. The experiential curriculum includes knowledge or skills gained by the learners as a result of learning experiences, which depend in turn on how the curriculum is implemented and therefore also on factors such as overall learning organization and school climate. Hence, one intrinsic effect of the experiential curriculum is the so-called 'hidden curriculum', which according to Glatthorn, Boschee and Whitehead (2006:23) is also referred to as the 'unstudied' or 'implicit' curriculum, which "might be seen as those aspects of the learned curriculum that lie outside the boundaries of the school's intentional efforts".

The learned curriculum is what learners have really learnt. It refers to knowledge, skills and competencies gained by learners as a direct result of the teaching and learning process. As Malcolm (1999:80) observes, "what teachers teach is not necessarily what students learn". This fact should lead us to bear in mind the remark by Broussard (2002:71) that "each student is different, and ... each situation is unique and must be handled with lots of thought". Referring to Africa, in particular sub-Saharan Africa, Sedel (2005:31) points out that less than one-third of the schoolgoing learners acquire the knowledge and skills specified in their national primary education curriculum. The learned curriculum is, in the last analysis, the learning outcomes of learners in comparison with the intended curriculum as well as the implemented curriculum.

Summing up the above discussion of the curriculum concept, I agree with Lovat and Smith (2003), who assert with Van den Akker (2003) that curriculum is essentially practical activity, which is creative and artistically informed by theory. Curriculum is concerned with decision-making, with choosing the most appropriate or justifiable

alternatives, given the learners, the teachers, the resources and the learning context (i.e. curriculum work is context-specific), integrating both perspectives of 'intention' and 'actuality', and of 'process' as well as 'product' in classroom practices. Lovat and Smith (2003), referring to interrelatedness of the different curriculum levels, observe that "curriculum at a national, state, system, or even faculty (school) level, can only be as intention. It is only at the classroom level, at the level of experience of teachers and learners that curriculum is not only intentional, but also actual". From discussing curriculum as concept, we may finally come to the conclusion of Doll Jr. (2002:46): "Looking at curriculum- not as a linear course to be run – but as complex and dynamic web of interactions evolving naturally into more varied interconnected forms is a formidable task that will require vision and perseverance". The curriculum concept implies different curriculum approaches as will be reiterated and detailed in the following section.

According to Malcolm (1999:10) "a clear vision of the curriculum in action and good documents are a first step (whether at school or national level). Investments in teacher participation, teacher development and management education are just as important". The Mozambique Education Sector Strategic Plan (ESSP, 1999-2003) under the motto "Reviving Schools and Expanding Opportunities" emphasized the need to review the existing curriculum for basic education to ensure a clear vision of the curriculum in action towards successful change. In fact, there was widespread agreement that the curriculum in force in primary schools was increasingly inappropriate to the rapid transformation of Mozambican society. The efficiency of delivered education was extremely low. For instance, according to ESSP (1999-2003), only six of every hundred students who begin school graduate from EP2 (upper primary level).

It was also assumed that the Ministry of Education should not develop a new curriculum on its own, nor impose a single model on all schools in the country. Therefore, the Ministry of Education initiated a democratic and participatory curriculum process under the leadership of INDE, involving teachers and other stakeholders in the development of a new curriculum framework as indicated in chapter one and described in chapter three. Simultaneously, preparation of the school textbooks and teachers' guides in accordance with the syllabi of the new

curriculum, providing training for teachers (preservice and inservice), as well as enhancing the qualifications and training of principals, were strategies adopted within the remit of efforts to implement the new curriculum.

2.3 CURRICULUM APPROACHES

The curriculum approaches are discussed in this section with a view to provide insights into the nature of the new Basic Education Curriculum in Mozambique. However, the pertinent reflections are made in section 2.3.7. According to Marsh and Willis (1999:18) curriculum approaches are:

different ways of thinking about curriculum and of connecting thought with practice, whether the many beliefs and ideas that constitute any particular curriculum approach are made explicit or remain implicit.

According to Ornstein and Hunkins (1993) the main curriculum approaches are the following:

- Behavioural
- Managerial
- Systems
- Academic
- Humanist
- Reconceptualist

An expository discussion of those approaches follows:

2.3.1 The behavioural approach

The behavioural approach is the oldest and still the reference approach to curriculum. “Behaviourism is primarily concerned with observable and measurable aspects of human behaviour” (Standridge, 2002:1). According to Power (1982:168), the basic principle of behaviourism is:

Whatever can be known about human beings must come from an observation of behaviour, moreover, must be conducted according to the strict methods of scientific procedure that is used in the physical sciences.”

So, the behavioural approach is logical and prescriptive and grounded on technical and scientific principles. It comprises paradigms or models as well as gradual and detailed strategies for formulating curriculum. This approach is generally underpinned by a plan specifying goals and objectives, contents and sequenced, structured activities, methodologies, and learning outcomes with corresponding criteria and evaluation forms, taking into account the established curriculum goals and objectives. Thus, the behavioural approach covers the curriculum development in its wider sense. It is not restricted to curriculum evaluation only. Williams (2002:2) avers that:

Behaviourists have a solid conviction that environmental forces responsible for making us what we are must be organized with extreme care and be reactivated in the school's curriculum with the same scientific precision that engineers employ when they design a complicated machine.

In fact, the behavioural approach is orientated to the behavioural objectives, which according to Zais (1976:312) "are simply objectives in terms of the observable behaviour expected of students after instruction." This means that the behavioural approach focuses on what learners should be able to do as a result of the teaching and learning process (Posner, 2004). Indeed, if curriculum workers are to agree on the meaning of the objectives that students are supposed to fulfil, they also need to agree on the operational criteria that express those objectives. In other words, everyone concerned with behavioural objectives, on the one hand, should know exactly what a given behavioural objective means; and on the other hand should be able to determine to what extent it has been achieved after instruction (i.e. teaching and learning process). Furthermore, as Standridge (2002) points out, behaviourists argue that human behaviour is learned although all behaviours can either be unlearned or relearned. This qualification should be taken into account in the process of curriculum development, especially in the curriculum design. At this point it is apposite to recall the observation by Lovat and Smith (2003:17) that "product and process cannot be separated: the process is the product: the way we learn is what we learn: we learn what we do". Hence, the behavioural curriculum approach implies a plan specifying goals and objectives, contents and sequenced, structured activities, methodologies, learning outcomes with corresponding criteria and evaluation forms, as noted above.

Alternative appellations for the behavioural approach are *logical-positivist, conceptual-empiricist, and experientialist, rational-scientific and technocratic* (Ornstein and Hunkins, 1993:2). It has recently regained much of its importance with the movement towards outcomes-based curriculum. These learning outcomes are skills, knowledge and behaviours embodied in the national curriculum and are the basis of all external exams and tests as well as reports on pupils' learning. Moreover, the learning outcomes are fundamental requirements or benchmarks designated to hold schools and teachers accountable in terms of producing verifiable evidence of the adequacy of learners' achievement (Lovat & Smith 2003). A careful reading and analysis of guidelines drawn up for the Mozambican new curriculum for basic education contained in a document titled "Curriculum Framework of Basic Education" PCEB, will recall that the said curriculum is premised on the behavioural approach. However, the teaching methodologies suggested in the new curriculum, specifically in the syllabi or teaching programmes, are clearly constructivist. In fact, the PCB shows that the overall exercise of curriculum change started with a thorough audit of learning outcomes (i.e. skills, attitudes, knowledge) as a measure of the effectiveness of the curriculum declared defunct. The outcomes were measured against the general objectives set up in the National Education System Act for basic education and reelaborated as the foundation stone of the new curriculum. With a view to integrating curriculum through interdisciplinary strategy the reelaborated objectives form the intended graduated profile or outcomes for basic education in that the general objectives are reflected in each curricular subject and specific objectives are derived from them. The selected content and learning activities are aimed at realising the objectives. The syllabi or teaching programmes are the official documents which incorporate the learning objectives in general and in specific terms, the selected content or activities and the foreseen learning time of each selected learning experience. The methodological suggestions, broadly referred to in PCEB, are also included in the syllabi. These methodological suggestions are oriented to student-centred learning, based on a constructivist, reflective, interdisciplinary and spiral teaching-learning approach, designed to develop basic skills, attitudes and knowledge. For instance, in the Natural Sciences Teaching Programme (an integrated component of the Teaching Program for Basic Education in the Third Learning Cycle), the principle is emphasized that the learners, children are not "a clean slate". When they start school they have already acquired a considerable body

of knowledge through observation, activities, games and imitation of adult behaviour. So, the learners normally have an intuitive explanation of some natural phenomena. The teacher must know about these intuitive ideas (preliminary knowledge) and use them as starting point for the construction of a scientific vision. Von Glasersfeld (1996:7) notes in this regard that “the task of the educator is not to dispense knowledge but to provide students with opportunities and incentives to built it up”. Simultaneously, the teacher contributes to eliminate students’ misconceptions formed by misinterpreting daily life experiences. The teacher bridges the gap between intuitive and scientific knowledge through dialogue and reflection; indeed, this kind of communicative teaching is essential when using constructivist methodology. Incidentally, Von Glasersfeld (1996:7) observes that “language is the most powerful tool available to the teacher, but it does not transport meanings or concepts. Language enables the teacher to orient the student’s conceptual construction by precluding certain pathways and making others more likely”. Lieberman (2001:160) argues that “teaching is both transmitting and engaging in transactional learning”. The Natural Sciences teaching programme refers to this constructivist approach as *mind challenging, transposition, elicitation* and *consolidation* of knowledge.

The behavioural approach is strongly linked to the idea of efficiency (*cf.* Ornstein and Hunkins 1993; and Smith 1996, 2000) which is largely imported from business, technological and industrial settings, where they are supported by the scientific management theories of Frederick Tailor. In this regard, Ornstein and Hunkins (1993:2) note that “often ensuring efficiency in schools meant eliminating small classes, increasing student-teacher ratios, hiring few administrators, cutting costs in teacher salaries, maintaining or reducing operational costs, and so on, and then preparing charts and graphs to show the resultant lower costs”. These measures are also delineated in the Education Sector Strategic Plan (ESSP), 2006-2010/11 (following the previous one covering the period 1999-2003 and applied in the Mozambican education system. Thus, the ESSP (2006-2010/11) recognizes that financial constraints prevent the appointment of sufficient numbers of qualified teachers at schools. In effect, the ESSP (2006-2010/11) indicates that for the projected increase of the new pupils’ admissions in the school system during the next five years within the efforts to Education for all (EFA), Mozambique Government would not be able to employ at primary schools graduated teachers from IMAPs, who

currently have a salary equivalent to 10.7 times of gross domestic product (GDP) per capita. Consequently, the ESSP (2006-2010/11) highlights that the affordable teachers, who have now been recruited are less than the real needs (in teachers). In fact, the student-teacher in EP1 ratio has risen from 62/1 in 1999 to 74/1 in 2005 and classes with more than 80 students in a classroom is the rule rather than the exception. (The 2005 Pretoria Declaration on Teachers, of which Mozambique is a signatory, recommends in paragraph 25 that “a useful benchmark for countries with excessive average class sizes would be 40 learners in a classroom”.) According to the ESSP (2006-2010/11) the growing deficit in the provision of education will be addressed by introducing measures such as the following:

- Reducing training for basic education (grades 1 to 7) to one year instead of two and lowering the salary accordingly.
- Abolishing the three-year training programme substituting the one-year programme, which meant the entry qualification would be grade ten rather than grade seven which was prescribed for the three-year course, and the starting salary was unaffected.
- Expanding the cost-effective in-service teacher training programmes with adequate resources coordinated by the ZIPs shed light on CRESCER Programmes (Courses of school capacity building: Systematic, continuous, experimental and reflexives).

These decisions may to some extent jeopardize the intended effectiveness of education. For example, effectiveness is by overcrowded classes, low salaries of teachers, unsatisfactory working conditions, reduced initial training periods and financial constraints that inhibit staff development. These problems are not only attributable to the poverty of the country, but especially to the tendency to mistakenly apply economic strategies designed to increase productivity in business and industry (e.g. the principle of measuring efficiency as a function of producing more in less time and also using relatively less resources) to the domain of education.

However, the behavioural approach has the benefit of clarity and precision in the specification of outcomes, although it is also the object of criticism for this very reason. Zais (1976) and Smith (1996, 2000) argue that the benefits of precise

specification are only observable at the lowest level of learning where trivial skills, competencies or outcomes are concerned (e.g. adding numbers, memorizing facts, answering specific questions), which are considered closed-end goals. The higher-order tasks (e.g., critical analysis of literature and art, analytic or synthetic thinking) imply open-ended goals requiring the definition of a vast number of specific objectives, which is impracticable in the process of curriculum development. In this debate, it is worth bringing up Zais's (1976:315) remark in which he emphasizes that:

Most of the criticism of behavioural objectives is based on what turns out to be a dogmatic application of the operational principle to a pre-Deweyan notion of "ends"- i.e., objectives viewed as independently validated terminal points toward which action is directed.

Thus, it is clear that behavioural approach needs to be updated and improved by applying it critically.

2.3.2 The managerial approach

The managerial approach entails consideration of the school as a social system, based on organizational theory, in which the constituent members (e.g. students, teachers, curriculum specialists, and administrators) interact in harmony with certain norms and behaviours. In this context the managerial approach focuses on programmes, schedules, space, resources and equipment, as well as personnel, requiring cooperation among teachers, students and those who are responsible for curriculum supervision outside of school. Ornstein & Hunkins (1993:3) noted that "consideration is given to committee and group processes, human relations, leadership styles and methods, and decision making". That is to say, the managerial approach gives more emphasis on the supervisory and administrative aspects of curriculum, focusing mainly on the organizational and implementation aspects of the process.

The managerial approach has to do with change and innovation, exploring "how curriculum specialists, supervisors, and administrators can facilitate these processes" (Ornstein & Hunkins, 1993:3). Under this viewpoint, the curriculum specialist or supervisor is regarded as a facilitator, a resource person (person who is available to help teachers or colleagues to achieve curriculum goals), an agent of change. As

noted earlier, the implementation strategies employed to introduce the Mozambican new basic education curriculum as defined in PCEB reflect the managerial approach. Indeed, the PCEB asserts that the success of any curriculum change initiative unquestionably depends on the appropriate use of implementation strategies, for which read a suitably adapted managerial approach translated into effective implementation strategies (see section 3.4 of this report). Above all, the following observation by Hall and Hord (2001:13-14) served as a guiding principle from the outset:

Administrators also have to secure the necessary infrastructure changes and long-term resource supports if use of an innovation is to continue indefinitely. And finally, yes, policy-makers need to design policies that legitimize the infrastructure changes and innovate practices and encourage the continued use of the innovation.

2.3.3 The systems approach

Among other names, the systems approach to designing curriculum, is also called instructional systems design (ISD). In accordance with Clark (1989:3), the system approach or instructional design may be understood as:

“a systematic model used to plan, design, develop, and evaluation training, which includes the following components: (1) a needs analysis; (2) a task analysis; (3) a definition of learning objectives; (4) the development of an assessment plan; (5) the development of learning material; (6) a plan to try out with revision (pilot) and (7) the implementation of the final product.

Clark’s definition (1989) of the systems approach classifies it under the behavioural approach since it is designed to achieve clear and measurable ends or objectives. Ornstein & Hunkins (1993) states that the main feature of the systems approach is the interconnectedness of different programs and content areas included in curriculum, while serving as an index of how the school is restructuring and reculturing, for example by introducing a monitoring and assessment system. That is to say, the systems approach involves curriculum integration, relevancy character to participants, monitoring mechanisms, evaluating procedures and practices forming part of curriculum implementation (e.g. systematic evaluation). In this regard, Bradley (2004) considers that by the systems approach the school involves its clients

(students, parents, institutions of continuing education and students' future employers) and stakeholders (people or organizations whose operation is directly or indirectly dependent on the quality of school) as part of the system. This curriculum approach is reflected in the new Mozambican basic education curriculum (PCEB 2003; Bazilashe, Dhorsan & Tembe, 2004; Castiano, Ngoenha & Berthoud 2005), which was crucially informed by a process of policy dialogue and consensus building. The following should be noted in this regard: modalities of consultation and participation in formulating curriculum transformation policy (e.g. definition of basic education objectives, integrated curriculum through interdisciplinarity, relevance of the curriculum to Mozambican society and piloting and monitoring of implementation of the new curriculum)

The literature refers to the ISD approach as especially effective in developing learning experiences that meet the needs of a well-defined target group (e.g. particular learners, Scafati, 1998), but critics of ISD approach complain that it lacks flexibility in the sense that it presupposes a closed and predictable system. That is to say, as Scafati (1998:389) points out, it is presumed that:

By clearly defining the objectives and the assessment processes of a course or lesson, ISD provides a consistent and repeatable educational experience. Consistency is the sense that any number of students can be exposed to the process and be assured that they will attain mastery of the subject.

Another objection to the ISD approach is that the process from inception to implementation takes too long, given the pressure of occupational demands that teachers have to meet. This time factor has a critical bearing on the efficiency of the system. However, Mingat (2005) notes that the productivity of time can greatly depend on how efficiently is used. In the same vein, Marsh & Willis (1999:94) aver that "... making decisions about how people should use their time and energy involves too many complexities to be reduced to a formula". Therefore, the above criticism is debatable since it does not affect the relevance of the ISD approach.

2.3.4 The academic approach

The academic approach “attempts to analyze and synthesize major positions, trends, and concepts of curriculum.”(Ornstein & Hunkins1993:6). It tends to be grounded on historical and philosophical curriculum developments and to a lesser extent on social conditions. This approach is concerned with comprehensive domains of schooling, including the study of education. It is usually scholastic and theoretical, hence, also referred to as “traditional, encyclopedic, synoptic, intellectual, or knowledge-oriented approach” (Ornstein & Hunkins 1993:6). Hewitt (2006:162) suggests that the academic approach is linked to the purposes of the famous Philadelphia Academy created in 1749 by Benjamin Franklin:

The academy curriculum included the traditional study of English, reading and writing, with attention to grammatical construction, pronunciation, writing style, and correct speech. History was included as the vehicle for learning morality, and new subjects included geography, philosophy, oratory (forensics and debate), politics and human affairs. What was innovative, even radical, was the inclusion of new, practical subjects for study. These curriculum additions proposed by Franklin were agriculture, technology, science, and inventions.

The Academic approach is reflected in the design of the Mozambican new curriculum as the pursuit of three main objectives, namely delivery of (1) basic literacy and numeracy; (2) basic technological skills in the domain of practical activities and arts; and (3) patriotic education expressed in the three comprehensive curricular areas defined in the PCEB as:

- communication skills and social sciences;
 - mathematics and natural sciences; and
 - practical and technological arts
- (see section 3.3.3 below).

2.3.5 The humanistic approach

According to Ornstein & Hunkins (1993), the humanistic approach is underpinned by child psychology with a view to coping with the needs and interests of children and by humanistic psychology with emphasis on valuing, ego identity, psychological health,

freedom to learn, and personal fulfilment. The teacher therefore serves as facilitator and resource person for students. The curriculum mainly focuses on active interaction among students and teachers, on problem solving, and on inquiry. These procedures are included in the framework of the new curriculum (PCEB).

2.3.6 The reconceptualists

The reconceptualists represent an approach to curriculum design without a model to guide the design (or to deal with technical matters), tending rather to focus on larger ideological and moral issues relating to education (not only curriculum) and economic and political institutions of society (not only of schools) (Ornstein & Hunkins 1993). This approach is rooted in philosophy as well as social and political contexts. According to Jackson (1992:35), it is based on three main characteristics:“(1) dissatisfaction with the Tyler Rationale, (2) the employment of eclectic traditions to explore curriculum, such as psychoanalytic theory, phenomenology, existentialism and (3) Marxist and neo-Marxist trends.” In the same vein, Pinar (1991:35) noted earlier that:

Reconceptualization is an umbrella term to referring to a diverse group whose common bond was opposition to the Tyler rationale, to behaviourism in curriculum conceptualization (including behavioural or performance objectives, quantitative evaluation, mastery learning, time on task), and to the ahistorical and atheoretical character of the field.

Again, Marsh and Stafford (1988:30) pointed out that the “reconceptualists represent a visible and concerted social movement in the 1980s.” This was the period, in particular, when personal rights and other social concerns such as freedom, democracy, equality and how to live together were predominant in society.

A basic premise of reconceptualism is rooted in the principle that the more students understand themselves, the more they will understand their world. Thus, curriculum development is politically connected with the historical, economic and contemporary social frame of reference in a national and international context. Hameyer (1991:21) emphasizes that the reconceptualists “criticize schooling and curricula in view of normative assumptions, side effects, and hidden mechanisms that reduce educational quality”. The new basic education curriculum in Mozambique reflects this approach in chapter two of the Curriculum Framework of Basic Education (PCEB, 2003) in which the political, economic, socio-cultural and educative contexts are

represented. Chapter three of the same document presents the general policy pursued by the new curriculum, focusing especially on basic education learner outcomes in personnel, socioeconomic, cultural and knowledge development domains. Previously, the ESSP (1992-2003:1) stated that:

Improving the quality of education that Mozambican citizens receive and providing them with the knowledge and skills that they will need to compete in the global economy is urgently important if they are to keep up with their regional neighbours and ensure sustainable livelihoods for themselves and their children.

As noted by Glatthorn, Boschee and Whitehead (2006:79) the reconceptualists are value-oriented theorists "...primarily engaged in what be termed 'educational consciousness-raising', attempting to sensitize educators to the values issues that lie at the hearts of both the hidden and the stated curricula".

2.3.7 Summary: Brief comment on curriculum approaches

In theory the three perspectives intended, implemented and attained curriculum and concomitant approaches differ in meaning according to the perspective of analysis. However they are intrinsically linked to each other so that it is quite hard to find situations characterized exclusively by one particular approach. Mozambique's new curriculum approach helps to illustrate the point. The design of the Mozambique new curriculum corroborates this statement: it presents features of different approaches. The characteristics of the behavioural approach are evident in the framework and syllabi philosophy of the new curriculum of basic education in Mozambique. Thus, as noted in section 2.3.1, the overall exercise of curriculum change started with a thorough diagnosis of the impact of the former curriculum in terms of its effectiveness in students' learning outcomes (i.e. students' skill, attitude and knowledge). The general objectives set up in the National Education System Act for basic education were reexamined and reelaborated as the foundation stone of the new curriculum. The restated objectives resulting from the employment of an interdisciplinary strategy to integrate the curriculum build the intended graduated profile of basic education or outcomes in the domains of (1) personal development, (2) socioeconomic development, (3) technical and scientific development and (4) cultural development

(PCEB, 2003). Thus, these general objectives/outcomes are reflected in each curricular subject and from which specific objectives were derived.

The defining features of the managerial approach are outlined in section 3.4 of this dissertation. In fact, the PCEB asserts that the success of curriculum change is unquestionably linked to appropriate use of implementation strategies that depend on school support for effective curriculum change. As noted earlier (section 2.3.3), the Systems approach is reflected in the policy dialogue and consensus building that characterized the process of creating the new curriculum. Points worth mentioning in this regard are the modalities of consultation and participation in the envisaged curriculum transformation, the basic education objectives, the interdisciplinary strategy used to integrate the curriculum, the pursuit of curriculum relevancy to Mozambican society, piloting and monitoring of implementation of the new curriculum, et cetera.

The Academic approach adopted in creating the new curriculum consisted in three main objectives, namely delivery of (1) basic literacy and numeracy, (2) basic technological skills in the domain of practical activities and arts, and (3) patriotic education expressed in the three comprehensive curricular areas defined in the PCEB, viz:

- communication skills and social sciences;
 - mathematics and natural sciences; and
 - practical and technological arts
- (see sections 2.3.4 above and 3.3.3 below).

The humanistic component of the new curriculum is evident in the endeavour to address the critical challenge of ensuring the relevance of the curriculum to learners themselves, to their families and communities, and to Mozambican society as a whole (PCEB, 2003). The new basic education curriculum in Mozambique reflects this approach in chapter two of Curriculum Framework of Basic Education (PCEB, 2003), which presents the political, economic, sociocultural and educative that informed the design. Chapter three of the same document presents the general policy informing the new curriculum, focusing especially on learner outcomes for

basic education in the domains of personnel, socioeconomic, cultural and knowledge development.

The intended, implemented and attained curriculum, as well as the curriculum approaches outlined above cannot be categorically dissociated from each other, particularly, since that could lead to a disjunction between theory and practice. In this regard, Deacon and Parker (1999:67-68) contend that “theory alone is contemplation (rationalism). Doing alone is habit (instrumentalism). The curriculum should be both instrumentalist and rationalist; and the theory/practice divide can be bridged by the production of competence.”

Accordingly, it is my contention that the three perspectives may be justified in the light of different approaches and that as noted by Lovat and Smith (2003:21), no definition of curriculum can be complete without addressing the following perspectives:

- Curriculum as product (achievement by students of learning outcomes that are observable, identifiable and measurable);
- Curriculum as process (teaching and learning methods, classroom practices);
- Curriculum as intention (planned curriculum);
- Curriculum as reality (actual curriculum, experience of teachers and learners at classroom level);
- Curriculum as both normative and descriptive (statements of what curriculum should be and descriptions of what curriculum is);
- Curriculum as action of critical reflection allowing selection of the best alternative and evaluation in the light of learners’, teachers’, and others’ experiences.

This understanding of the curriculum as concept and of the curriculum approaches discussed earlier lead us to Stenhouse’s (1975:71) conclusion that “our firm knowledge of the educational process is very limited. Large-scale theories have great utility as staging-points in the advancement of knowledge, but the more logically satisfying they are, the less likely they are to be adequate”. The following discussion of the nature and functions of curriculum theories serves to pave the way for a discussion of curriculum development and within the present parameters, to deepen insights into the curriculum concept and the curriculum approaches. This knowledge might help us to deal critically with large-scale theories.

2.4 THE NATURE AND FUNCTIONS OF CURRICULUM THEORY

2.4.1 Introduction

This section is intended to lay a theoretical foundation as a vantage point from which to seek an answer to the first research question at issue: “What is the nature of the new curriculum and how far does it prescribe the way it is to be implemented?” The section therefore starts with a brief outline of curriculum theory and how it developed from inception. This is followed by a rehearsal of the functions of curriculum theory in terms of description, prediction, explanation and guidance of the process of school curriculum development. The discussion will then move to the supplementary theoretical section 2.5 (on curriculum development: planning, disseminating, implementation and evaluation) as a further step towards answering first research question.

According to Glatthorn, Boschee and Whitehead (2006:74), “a curriculum theory is a set of related educational concepts that affords a systematic and illuminating perspective on curricular phenomena”. Similarly, Beauchamp (1981:60) defined curriculum theory earlier as “a set of related statements that give meaning to a school’s curriculum by pointing up the relationships among its elements and by directing its development, its use, and its evaluation”. Curriculum theories are classified in terms of what they deal with. Ornstein and Hunkins (1993) identify two major categories of curriculum theories: *design theories* and *engineering theories*.

- *Design theories* are concerned with basic organization of the curriculum plan, that is, with the establishment of curriculum frameworks. The pillars of design theories are philosophy as well as social and psychology theories. Philosophical and humanistic theories are normative. Basing on values, their main function is to guide decisions about:
 - What should be included in the curriculum.
 - What to do or not to do in creating the curriculum, addressing coherence and methodology of acquiring the knowledge, integration of the emotional and physical with the intellectual.
- *Engineering theories* are designed to aid a search for strategies to guide curriculum development activities, explaining, describing and predicting them

through plans, principles and/or methods or procedures. They are partially based on principles relating to measurement and statistics.

Glatthorn, Boschee and Whitehead (2006:74) divide curriculum theories into four categories respectively oriented according to structure, values, content and processes. The first group is concerned chiefly with the task of identifying the elements of the curriculum and how they relate to each other. Structure-oriented theories normally have a descriptive and explanatory function: they describe what theories are. Value-oriented theories are concerned mainly with examining the values and assumptions of curriculum makers and their products. Values-oriented theories tend to have an epistemological and sociological character, that is to say as noted by Lovat and Smith (2003:134): “fullness of ways of knowing and levels of reflection, the fullness of learning combining planning and practice, theory-and-development, as one”. So, value-oriented theorists endeavour to raise educators’ awareness of the value issues underlying hidden and planned curricula. Value-oriented theorists are known as reconceptualists. Content-oriented theories are concerned primarily with the selection and organization of the curriculum content. Content-oriented theories tend to be prescriptive in nature, i.e., to determine what the curriculum should contain. Process-oriented theories mainly describe how curriculum is developed or suggest how it should be developed, so process theories are descriptive or prescriptive.

However, as Smith and Lovat (2003:43) point out, this division is artificial, because

ideally, the reflecting which is implied in Curriculum Theory, and the action which is implied in Curriculum Design, development and Evaluation, can only properly be understood as one process, intimately and intricately interwoven. In no way is one necessarily preceded or followed by the other. They are forever tumbling in on each other as the procedures involved in teaching/ learning unfold.

2.4.2 The nature of curriculum theory: categories of knowledge

George Beauchamp (1975, 1981) notes that all theories are derived from three broad categories of knowledge:

- Humanities: philosophy, music, theology, art and literature;

- Natural Sciences: chemistry, physics, botany, zoology, geology and other similar disciplines;
 - Social sciences: history, sociology, psychology, and anthropology, and economics, among others of this nature.
- (Ornstein & Hukins, 1993:184; Zais, 1976:75)

Thus, curriculum theory may be regarded as the heart or foundation of education theory. It draws on psychology, sociology and philosophy. The curriculum uses information from various disciplines and sets up rules and procedures for using the knowledge in the realm of humanities, natural sciences and social sciences. Nevertheless, it is essential to bear in mind the following observation of Lovat and Smith (2003: 43):

Neither Educational Psychology nor Sociology of Education nor Philosophy of Education is an infallible discipline, nor do their practitioners always do their job well. One's experiences of designing, developing and evaluating curricula can, itself, be enlightening showing up weaknesses in one of the foundational theories which might, after all, have been formulated in isolation from a 'live' teaching context."

This important statement of Lovat and Smith (2003) emphasizes the permanent need to be critical with a view to selecting the best options that will be most conducive to effective teaching and learning. For the specific case of the Mozambican new curriculum an integrated (interdisciplinary) curriculum was selected with particular emphasis on the curricular areas described in sections 3.3.2 and 3.3.3.

2.4.3 The functions of curriculum theory with specific reference to description, prediction, explanation and guidance in the process of school curriculum development

Theory comes from the Greek word *theoria* meaning "wakefulness of mind"; it explains reality, making people aware of their world and its interactions.

Many writers identify four functions of theory: (1) description; (2) prediction; (3) explanation; (4) guidance.

- Description is an exact and accurate definition of the terms employed in the theory, classification of data, and reporting of event.

- Prediction consists in forecasting in the sense of indicating foreseen outcomes of planned courses of action.
- Explanation is susceptible to various interpretations. For scholars or writers such as Beauchamp, explanation refers to elaborating predictable relationships, rendering comprehensible in the sense of predicting the behaviour of a phenomenon under a variety of specified conditions. O'Connor (1957), for instance, defines “explanation” as the establishment of a relationship between what-is-to-be-explained and present knowledge, that is to say, associating what-is-to-be in the sense of relating present experience to the phenomena to be explained.
- Guidance comprises the heuristics function, enabling problem solving by learning from past experience and investigating practical ways of finding a solution.

Thus,

“...the function of curriculum theory is to describe, predict, and explain curricular phenomena and to serve as a policy for the guidance of curriculum activities” (Zais, 1976: 87).

Marsh (2004:199) in discussing the functions of curriculum theory with specific reference to guidance, notes that:

... the potential use of curriculum theories is very clear. Appropriate curriculum theories (if we had them) could guide the work of teachers, policy – makers, administrators and anyone else involved in curriculum planning and development. They would help researchers analyse data and provide a much- needed impetus and direction for curriculum research with the benefits flowing on to classroom teachers.

2.5 CURRICULUM DEVELOPMENT: PLANNING OR DESIGNING, DISSEMINATION, IMPLEMENTATION AND EVALUATION

2.5.1 Clarifying the concept of curriculum development

According to Oliva (1992), curriculum development comprehends planning, implementation and evaluation, particularly with a view to change and betterment. Curriculum development is therefore synonymous with curriculum improvement. In their explanation of curriculum development, Carl et al. (1988:23), adding the dissemination phase, assert that

Curriculum development can be regarded as that process during which the phases of curriculum design, dissemination, implementation and evaluation feature strongly. The development that takes place within these phases, aims at more effective teaching and therefore the ability to plan is a strong characteristic of each phase.

In fact, the definitions given by Olivia (1992) and Carl et al. (1988) have essentially the same meaning with slight differences. Hence the following analysis: While in Oliva's (1992) definition, the planning phase seems to bear the same emphasis as the other phases, the definition given by Carl et al. (1988) is based on the assumption that planning is inherent in all phases of curriculum development. More about this in the next section (2.5.2). However, the second definition clearly refers to the design phase, which is apparently omitted or not mentioned in the first one. Thus, the design phase as the thinking stage is essentially the planning phase. This concept will be elaborated further in section 2.5.2. I nevertheless agree with the point that the planning aspect should be a prominent aspect of each phase of curriculum development.

Another important stage of curriculum development, underlined in the second definition, is the dissemination phase, although it is not explicitly mentioned in the first one. The researcher contends that the planning or design phase involves a consultative process (advisable for successful implementation) then dissemination is automatically included. More about this in the discussion of the phases of curriculum development.

In conclusion, it would seem that all phases of curriculum development are intrinsically connected and that there is a dynamic interaction among them. Relatedly, Pinar et al. (1995: 664) define curriculum development as "a generic term which includes curriculum policy, school reform, curriculum planning, design and organization, curriculum implementation, curriculum technology, curriculum supervision and curriculum evaluation."

Marsh and Willis (1999:23) argue that curriculum developers have to ask four big questions concerned with selecting objectives, selecting learning experiences, organizing learning experiences and evaluating. Conversely, Pinar et al. (1995) aver

that defining curriculum objectives, design, implementation, and evaluation are no longer the major concepts of the day. Equally, they argue that, keeping the curriculum ordered and organized, which used to be a critical requirement has now become outmoded. For Pinar et al. (1995), curriculum development has been reconceived as a less hierarchical and more collaborative activity. Today, curriculum development is concerned with curriculum understanding, which implies many degrees of complexity in the meaning of curriculum activity, of being a curriculum specialist, and of working for curriculum change.

Therefore, understanding curriculum means understanding it as institutionalized text in the sense that what happens in schools is translated into institutional and discursive practices, structures, images, and experiences that can be analysed in various ways, for instance politically, phenomenologically, in relation to gender and deconstructively. However, it is important to note that “the field remains interested in serving the daily and technical needs of those who work in schools” (Pinar et al., 1995:32). In effect, a major shift is characterized by the change of relationship between researchers and practitioners to more collaborative action for the benefit of both towards effective curriculum innovation. Currently, everybody who deals with curriculum is both theorist and practitioner. Another important feature of the field is the awareness that curriculum work is evolving in response to the changes operating in the world. In light of this consciousness, the contemporary field is wedded to understanding curriculum historically in the sense of associating curriculum with a particular temporal context or history.

In a nutshell, according to Pinar et al. (1995), curriculum development today implies self-reflection, self-understanding about what happens in school, understanding curriculum as institutional text in terms of the everyday functioning of the school, but without losing sight of the imperative of institutional improvement. In this regard, Pinar et al. agree with Marsh and Willis (1999:95) who state that “contemporary theorizing suggests that curricula can be planned, enacted, and experienced in many different ways appropriate to many different circumstances and people.” The next section deals with the phases of curriculum development as deployed by Mozambique according to the Curriculum Framework of Basic Education (PCEB,

2003). This exposition is intended to provide the reader with insights to which the new curriculum prescribes how it must be implemented.

2.5.2 Components and phases of curriculum development

2.5.2.1 Introduction

Whereas the theoretical background given in section 2.4 addresses the first part of the research question (concerning the nature of the new curriculum in Mozambique), the second part of that question (concerning the extent to which the new curriculum prescribes how it must be implemented) is addressed in section 2.5, with particular reference to 2.5.2 where curriculum design (planning) is discussed as the integrating component/phase of curriculum development. The discussion is informed by the reference to relevant literature. Other components considered are dissemination, implementation and evaluation of curriculum.

2.5.2.2 Curriculum design

Pratt (1994:27) asserts that design in general is the essence of all human activity, since

we plan almost constantly, by giving forethought to our actions, predicting consequences, weighing alternatives. This is a part of what it is to be a human being. It is an integral part of being a professional.

Glancing at this quotation, one discerns immediately that, in general, undertaking any activity without **design** or **plan** is irrational, because it runs counter to the natural inclination of human behaviour in preparation for any intentional activity. Unplanned activity is unprofessional because it predisposes the relevant activity to failure for lack of vision, clear goals, strategy and stocktaking of required resources to accomplish the relevant assignment. Undertaking any activity without **design** or **plan** is bound to run into difficulties, and the way out of such difficulties is bound to be obscure precisely because of the lack of planning in the first place.

The same writer expresses a preference for referring to curriculum planning instead of design, contending that

curriculum planning might be defined as “the art and science of planning the conditions of learning.” These conditions include such considerations as identification of the learning needs to be met; selection of the modes of evaluation to be used; determination of entry characteristics of learners; selection of instruction content and methods; provision for individual differences, and logistical issues such as choice of materials, equipment, facilities, personnel, time and cost (Pratt, 1994:29).

Carl et al. (1988) point out that curriculum design may be understood as the creation or design of a new curriculum as well as the eventual replanning of an existing curriculum following a thorough evaluation of it. The main goal of curriculum design at school level is to enable more effective teaching for the learner.

Thus, Carl et al. (1988) and Pratt (1994) as well as other prominent scholars, such as Klein (1991) and Doll (1992), agree that curriculum design is undertaken with the aim to ensure effective schooling. For instance, whereas Klein (1991:336) avers that “the primary or exclusive basis for making curricular decisions depends largely upon the values of the developer about what the curriculum ought to do for or contribute to the growth of students”, Doll (1992:187) correctly maintaining that “curriculum design is a way of organizing that permits curriculum ideas to function.”

It can be taken for granted that a good curriculum design will be cost-effective for reasons clearly stated by Doll (1992:187):

If a curriculum design is to prove genuinely commendable in an era in which universal excellence is prized, it must generate affirmative answers to half-dozen questions: (1) Will this design treat an educational malaise, rather than merely the symptoms of the malaise? (2) Does it go straight toward meeting particular needs of learners? (3) Is it directed toward achieving broad and acceptable goals rather than narrow and selfish ones? (4) Will it innovate all the people who should be involved in planning? (5) Will it lend participants courage and hope and so raise their expectations? (6) Will it contribute to democratic as opposed to elitist schooling?

A curriculum design can only remedy educational problems if it is based on a thorough diagnosis, on appropriate research and on positive and relevant practical experience. It may be expensive at first, but its effect in the long term is

compensatory, making it an affordable initiative. In contrast, a curriculum designed in haste often ignores the real problem and results in ineffective education.

In the final analysis, curriculum policy should provide affirmative answers to the six questions raised by Doll (1992) concerning curriculum design. A similar view is expressed by Pinar et al. (1995), who regard curriculum policy as a body of law and regulation, which:

- establishes standards and procedures for central and local government in relation with each other and with schools;
- defines relationships among school members and stakeholders;
- stipulates school organizational structure and budgeting; and
- sets goals and contents, including values, to be addressed at school.

Thus, Pinar et al. (1995) regard curriculum policy as instrumental and as a product of negotiation among various constituencies.

2.5.2.3 Curriculum dissemination nationwide

Curriculum dissemination is an essential component and phase of curriculum development. It creates a bridge between the curriculum theory and its implementation or practice. Indeed, the implementation of the new curriculum is the realisation of a process of educational change. Hence, the importance of curriculum dissemination strategies. In this regard, Kelly (2004:107) observes that "... a major reason for the failure of the Schools Council to influence curriculum change more directly and more widely was to be found in the dissemination strategies that were adopted".

According to Carl et al (1988) and Leithwood (1991) *curriculum dissemination* or *curriculum diffusion* consists in the distribution or publication of information, reflections and decisions. It refers to the spread of information about curriculum renewal, namely about innovative instruction or instruction-related practices aimed at preparing and informing all those involved with the curriculum change.

Curriculum dissemination turns out to be a prerequisite for a meaningful and successful implementation of curriculum renewal or curriculum change. Researches

show that renewal has often failed due to lack of dissemination or hasty and consequently superficial dissemination. As noted by Leithwood (1991), dissemination is pivotal since it may result in changed practices, for example, by school members, especially if they find the disseminated new ideas acceptable and decide to put them into practice.

Theoretically curriculum dissemination should follow the design phase, but if design is participatory, as it should be, then design blends with dissemination. In this regard, Carl et al. (1988) acknowledge the importance of training users in preparation for the implementation of a new or adjusted curriculum; in fact they emphasize the need to persuade and influence teachers to become involved in the design phase already.

Obviously, teachers' participation in the curriculum design is problematic since, according to Rasool (1999:176):

Teachers' participation in the curriculum process can only be effected by a system of representative participation as has been the case. Given the numbers of teachers and the complexity of modern society, it is unrealistic or impractical for everybody to be involved in the making of all decisions.

This is a thorny problem that can only be overcome with effective dissemination as a sequel to design. It follows therefore that the critical need for teachers preparation makes them in many senses the most important educational resource we have since it is they who will determine whether the new curriculum succeeds. Monyokolo and Potenza (1999:236) contend in this regard that "the success of the new curriculum depends on the training and support that teachers receive, and their ability to mobilize and manage the resources around them to implement the curriculum". Earlier, Brown, Oke and Brown (1982:6) noted that "the greatest single factor in the teaching process is the teacher. No technique, no device, no gadget can guarantee success - only the teacher can do this. The greatest motivating device yet discovered is the highly motivated teacher".

2.5.2.4 Curriculum implementation: Curriculum context and factors influencing curriculum implementation

The current research literature on implementing curriculum change in different parts of the world refers, with particular emphasis, to **contextual conditions** in which implementation may occur. In this regard, McLaughlin (1998) points out that context is a key element that:

- On the one hand, makes policy implementation a “problem”; and
- On the other hand, contributes to the highly variable local responses that trouble policymakers.

McLaughlin (1998:72) gives reasons for these problems in his contention that the effectiveness of policy implementation depends:

- on how it is interpreted and transformed at each point in the process; and
- on the response of the individual at the end of the line.

It seems, then, that curriculum outcomes depend on how the curriculum change is understood or perceived and implemented at each level, from the Ministry of Education down to the school and more particularly on the response it receives in the classroom, which is the crucial test for the whole process. In corroboration McLaughlin (1998:72) notes that “what matters most to policy outcomes are local capacity and will.” In further corroboration Darling-Hammond (1998) asserts that the fate of new programmes and ideas is decided by teachers’ and administrators’ opportunities and capacity to learn, experiment, and adapt ideas to their local context.

Meanwhile, Skilbeck (1998:129) points out that

the responsibility of the school for curriculum development cannot be determined either by the individual school alone or by reference only to what schools do: the school is part of a wider context, usually of a system whose elements interact. But within that system it is not simply a delivery agency; it has to create the curriculum within the national (or state/regional, etc.) framework.

This argument seems to underestimate the role of the individual school, clearly implied by McLaughlin’s emphasis on **local capacity** and **will**; but Skilbeck’s argument in fact means that the degree of “local capacity and will” depends on interaction with other levels of the school system and may therefore be influenced by

the attitudes of school administrators in the immediate school context as well as the wider educational management context.

In this regard, Miles (1998:54) states that school change

is a matter not just of planning, nor of finding and installing “good practices”, but of an organically — led and managed process deeply influenced by the local context, with some predictable regularities and great many unforeseen contingencies. It could be considered “local” reform.

Taking into account the role of teachers and principals in the process of educational change, Lieberman (1998:18) emphasizes the importance of **context**, asserting that their practices and ideas depend on contextual conditions, namely “*leadership, school culture, staff development, networks of school where topics to be replayed and have continually resurfaced as critical themes in the change literature.*”

So far the contextual conditions referred to have not been clearly defined. Lieberman, however, narrows down the concept to a particular school, referring to the specific features of leadership, school culture and staff development, as well as school networks where critical topics are carefully discussed, examined, exemplified or simulated as role-play. Naturally wider influences should also be given credence: Geographic, socio-economic, cultural and political conditions, as well as interaction between the school and other levels of the general school system.

It seems to me that the success of curriculum implementation depends greatly on our own efforts within the school. This conclusion is considered by Skilbeck (1998:121) who contends that

none should obscure the fundamental importance of the school itself and of teaching as the focus of effort and activity in nurturing basic educational values, fostering student growth and achieving crucial societal goals.”

I also strongly agree with Fullan (1998:222), who states that “the very place to begin the change is within ourselves. In complex societies like our own, we have to learn to cope and grow despite the system.” Fullan concludes that “we must then develop our

own individual capacities to learn and keep on learning and not to let the vicissitudes of change get us down.” Fink and Stool (1998:306) point out, however, that it is critical to bear in mind, too, that “schools need to be part of a wider system, networking with other schools as well as the school district, community, higher education, and business”. Furthermore, as Cherryholmes (1988:274) emphasizes, we cannot overlook the fact that “successful change often requires more inclusive institutional changes.”

Still related to contextual conditions, Skilbeck (1998:144) states decisively:

What is of undeniable importance is the need, in any kind of curriculum development, for well educated, competent, responsive and responsible teachers, well-resourced schools and intelligent leadership.

This apparently obvious statement is susceptible of various interpretations. One of them is to consider that curriculum development is inconceivable without teachers who conform to the stated. A second possibility is to assume that given the essential nature of the stated characteristics, a concerted effort is required to ensure that these characteristics are clearly in evidence to enable curriculum implementation. In fact, as Skilbeck (1998:125) points out, there is a need to ensure the feasibility of the principle that “teacher development and curriculum development, including assessment procedures, must go hand-to-hand.”

Likewise, Darling-Hammod (1998:644) recommends that:

rather than seeking to make the current system of schooling perform more efficiently by standardizing practice, school reform efforts must focus on building the capacity of schools and teachers to undertake tasks they have never before been called upon to accomplish- i.e. ensuring that all students will learn to think critically, invent, produce and problem-solve.

Thus, capacity building should happen primarily within the school. Skilbeck (1998:135-136) expresses the wish in this regard that: “schools would so organize themselves as to facilitate local teacher development groups and effective co-operation in making and using new curricula.” Again, Olson and Lang (1999:73) emphasize that “reflective dialogue in association with innovative ideas can give rise

to professional growth; existing frameworks found wanting are revised and become more powerful in coping with the new realities.” In fact, the new role of the teacher in education change requires a different teacher profile (*cf.* Olson & Lang 1999:76):

Often the teacher acts as an authority figure, possessing a superior level of subject competence, but in the knowledge-society and given the demand for student autonomy in learning this notion is becoming increasingly difficult, if not impossible, to sustain. The teacher can, however, become a powerful role model as someone committed to lifelong learning, someone who has acquired the skills of learning and a respect of for knowledge, who is well connected with acknowledged by others who are influential in the community, who knows whom to approach for particular areas of expertise and how to evaluate what is offered.

Furthermore, it is a questionable assumption to speak about well-resourced schools. Skilbeck (1998:134) explains:

Resource scarcity is a relative concept (“relative deprivation”); teachers and administrators in the technically advanced societies who use this as a reason for didactic, textbook-based instructions or constant whole class teaching need to be reminded of the really serious problems of resource scarcity in the poorer two thirds of the world’s nations. Resource constraints of some kind are ever present and while they indicate conditions, they are not a reason for organizational inflexibility.

The question of resources, therefore, may be raised as plain excuse for justifying the lack of necessary initiative to deal with essentially unrelated school problems. Incidentally, Hargreaves (1998:284) emphasizes that “*we need to develop our organizations so that they have improved capacity to learn from and to solve ongoing problems.*” Further on, he states more explicitly:

Under chaos and complexity it is extremely important to lead by empowering people, releasing their creativity, and finding different ways to bring them together so they can learn to improve continuously, scan the environment and solve problems as effectively as they emerge (Hargreaves, 1998:284).

Thus, without minimizing the importance of resources, the primary emphasis should be on seeking collective and alternative solutions instead of shrugging off the problem by blaming it on inadequate resources “We must then develop our own individual capacities to learn and to keep on learning, and not let the vicissitudes of

change get us down” (Fullan, 1998:224).

We may conclude from the literature that:

Among contextual conditions for successful curriculum implementation, **leadership** plays a very important role, because according to Hargreaves (1998:285):

managing change becomes a collective process, not an individual one. Initiative and creativity come out of the shadows of coordination and control. Leadership calls for the ability to create underlying senses of basic personal safety and emotional security, in which risk and creativity can flourish. Efforts are coordinated and new directions set by learning, information gathering and dialogue rather than through administrative regulation and hierarchical control.

An analysis of the research findings suggests that the need to create an enabling environment implies re-culturing and retiming as well as restructuring of schools. In this regard, Fullan (1998:226) highlights that:

- Re-culturing transforms the habits, skills and practices of educators and others toward greater professional community, which focuses on what students are learning and what actions should be taken to improve the situation.
- Retiming tackles the question of how time can be used more resourcefully for both teachers and students.
- Re-culturing and retiming should drive restructuring because we already know that they make a huge difference on learning, although they are very difficult to change.

2.5.2.5 Curriculum evaluation

Curriculum evaluation or assessment may be understood as a broad and continuous effort to trace its effects in terms of content and feasibility towards the achievement of defined goals. In this regard, on the one hand curriculum evaluation comprises evaluation or assessment of curriculum as such. It examines the adequacy of the curriculum for the learners, to what extent the curriculum enables or prevents effective teaching and learning. On the other hand, curriculum evaluation explores

the process of monitoring and measurement of learning achievement in classroom practice, that is to say, the support given for the success of the pupils supplemented by suitable measurement following the formative assessment of the student. This component of curriculum evaluation is a crucial aspect of curriculum implementation. After conducting field researches Fink and Stoll (1998:316) assert:

Efforts to improve schools from within are certainly undermined by inadequate and inappropriate assessment strategies. If we want teachers to do a better job for students then one place to start is with the what, the how, and the why of assessment. Rather than using assessment to find weaknesses, place blame, and promote guilt, change agents need to work with teachers to find more appropriate ways to use assessments to promote students' learning.

The discussion above shows the complexity of curriculum development with its densely interconnected phases. It is clear from the above discussion that reculturing and restructuring of the school have to be a never-ending process, and that support networks around the school have to drive the process. Analysis contained in ESSP (1999-2003), ESSP (2006-2010/11) and PCEB as well as chapters five and six of the present dissertation shows efforts to achieve effective curriculum change should be intensified, especially in the areas of dissemination, implementation and evaluation. The next section will turn specifically to curriculum development models.

2.5.3 The curriculum development models

Curriculum development models are different programmatic plans (various sequences of steps devised with a view to curriculum effectiveness) which implies continuous monitoring of implementation to ensure that relevant considerations receive due attention. Kelly (1985:15) correctly asserts that

in engaging in curriculum planning, therefore, we need to be clear about the logic of the process and we need to take full account of all those other factors that appear to have some relevance to our enterprise, but we also need some basis upon which we can make the necessary choices and selection, a set of criteria, a framework of values within which to work.

Hameyer (1991:20) likewise asserts that a conceptual curriculum model “provides rules for deliberate interaction and activities, criteria for intervention, and guidelines

for evaluation”. It stands to reason that curriculum models must be known and understood in order to evaluate their implementation effectively. An overview of curriculum development models follows:

2.5.3.1 The Taba model

This model is most commonly used. Taba (1962) argues that curriculum should be designed by the teachers rather than handed down by higher authority. In this regard she postulates that the teachers should start the process by creating trial teaching-learning units in their schools rather than engaging from outset in creating a general curriculum design. Unlike the traditional approach which proceeds from the general to the particular, the approach in this case is inductive. It consists of five consecutive steps (see figure 2.1):

1. Producing pilot units

This stage proceeds in eight steps:

- *Diagnosis of needs* consisting in a clear identification of the students’ needs with due allowance for gaps, deficiencies and variations in students backgrounds. According to Taba (1962:12), “diagnosis, then, is an important first step in determining what the curriculum should be for a given population”.
- *Formulation of objectives or goals* to be targeted in the light of diagnosis.

Taba (1962:12) avers that:

In large part the objectives determine what content is important and how it should be organized. For example, if the goal of studying world history is to produce intelligent judgement about the current world scene, certain parts of history are bound to be more important than others. If the goal is to create a common perception of the past, then other aspects of world history and other ways of learning it become important. If reflective thinking is an important goal, a thorough study of fewer topics and greater opportunities to relate ideas would be more important than a complete coverage of facts.

- *Selection of contents* by determining appropriate subject matters or topics aimed at defined objectives. This process must take account of different levels of learners’ capacity to grasp the content with due attention to level of introduction as well as continuity or sequencing.

- *Organization of content* deciding at what levels, how deep and in what sequences the subject matter will be dealt with or covered.
- *Selection of learning experiences* adopting methodologies or strategies as well as learning activities. Taba (1962:13) asserts that “the planning of learning experiences becomes a part of a major strategy of curriculum building instead of being relegated to incidental decisions made by the teacher at the moment of teaching”.
- *Organization of learning activities*: deciding how to engage learners’ interest in and commitment to content, and combinations and sequences to be followed, given the characteristics and general background of targeted students.
- *Determining what and how to evaluate with the aid of appropriate techniques* whether and to what extent defined objectives are being or have been achieved.
- *Checking for balance and sequence*: observing consistency among the various parts of the teacher-learning units, with a view to securing adequate flow of learning experiences and a balanced combination of learning types and forms of expression; in brief, ensuring effective interdisciplinarity.

2. *Testing experimental units*

This phase consists in evaluating the validity; teach-ability and adequacy of designed learning units.

3. *Revising and consolidating*

After testing the experimental units, they are modified to ensure that they keep pace and are well adapted to variations in students’ needs and abilities, available resources and different styles of teaching.

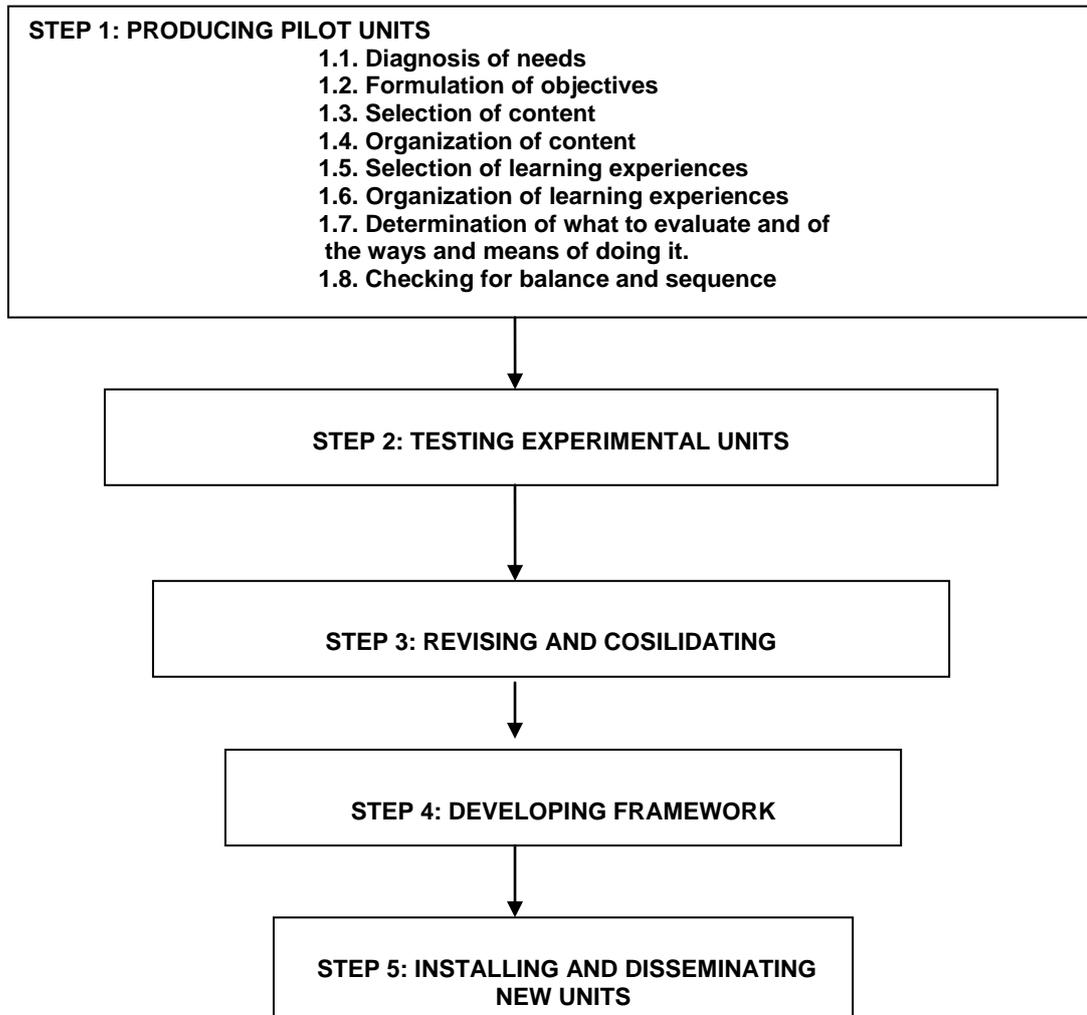
4. *Developing a framework*

In light of the overall activity undertaken in the first three-step sequence, curriculum specialists make a draft of a rationale for the curriculum planned.

5. *Installing and disseminating new units*

At this stage an appropriate network for in-service training is established so that the teachers can implement pilot teaching-learning units in their classes.

Figure 2.1 Curriculum development model according to Taba (1962)



2.5.3.2 The Saylor, Alexander and Lewis model

This model is premised on a deductive approach and the first step, advisedly is to define the major educational goals and specific objectives. Saylor, Alexander and Lewis (1981:31) observe that “examination of past and present practices of curriculum planning indicates a frequent lack of a continuing goals and objectives, which is essential to systematic curriculum planning”. The goals and objectives of this approach are framed with reference to four areas: *personal development, social*

competence, continued learning skills, and specialization. The authors warn that the model should be not enforced dogmatically but should make allowances for varied educational settings and adaptive curriculum plans within the stated areas without implicating spheres that are not specifically intended.

Referring to personal development, Saylor, Alexander, and Lewis (1981:34) argue that “in a very general sense the entire purpose of education is to aid the development of the person”. Furthermore, they clarify the concept of personal development, asserting that:

The personal development domain includes a vast array of learning opportunities: basic communication skills; most opportunities relating to the so-called general education objectives; value assessment and development; guidance and counselling services; health and physical education; exploratory subjects; and activities and opportunities that give each individual chances to discover areas of interest for later specialization. Esthetic education plays an important role in personal development (Saylor, Alexander, and Lewis, 1981:34).

Regarding social competence, the same authors observe that, in a society of human beings, and especially in one which prizes democratic values and processes, a continuous and essential goal of education is ever-improving social competence that includes citizenship education, social welfare, human relations, various knowledge areas of social sciences and humanities and languages. Consequently, education towards social competence implies:

...social interaction and organization within the schools themselves; the participation of students in the various social groups and institutions of their communities; and specific studies and skill-development activities related to particular human relations problems within the school and community, such as those involved in cultural differences and conflicts, and, again, valuing processes.

Particularly note the following observation made by the said authors on social competence: “Efforts to achieve aims associated with the social competence domain can, if narrowly conceived, interfere with personal development.” The reference here is to the critical need to release people from confines of their particular place in space and time by widening their frame of reference so that they have latitude for critical thinking and continuous questioning of their immediate

situation as well as the capacity to respond to future changes by reinventing themselves and society as a whole for a better world.

With respect to continuous upgrading of skills, the authors aver that with the ever-increasing changes in today's society, the central mission of schooling is to develop life-long learners by instilling basic skills that will lay the groundwork for continuous self-motivated learning and self-improvement, to which end the authors suggest the following activities and learning experiences: ability in reading, listening, viewing, and speaking, employing of learning skills such as interviewing, discussing, interacting; using various aids to information retrieval, namely information technology (IT) and telecommunications; analyzing issues, selecting alternatives, piloting ideas; and generalizing (promoting generalizability of teaching experiences).

The authors further note that specialization includes traditional school areas, generally classified as prevocational or vocational, music, art, sports, cut-across learning opportunities selected on the basis of individual interest and any field that can be explored by an individual chosen for specialization.

It is up to curriculum specialists to decide on the right learning opportunities and mode of delivery for each domain. In order to implement the mandatory curriculum plan, teachers must produce instructional plans that specify appropriate instructional objectives and methods. Finally, the authors contend that their model is the definitive means of determining whether critical goals and objectives have been achieved.

2.5.3.3 *The Tyler model*

This model is embodied in Tyler's work titled 'Basic Principles of Curriculum and Instruction' (1949). It comprises the following stages:

1. The first stage includes the selection of objectives by the curriculum planners from three sources, namely the learners, society and the subject matter.
 - The curriculum design starts with research to determine the total range of learners' educational, social, occupational, physical, psychological, and recreational needs and interests. Tyler (1949:6) avers that learners' needs

are the extent to which their existing condition falls short of the prescribed standards or norms. It is recommended that teachers resort to observation, interviews with students and parents, questionnaires and tests to determine needs reliably.

- The next step in formulating general objectives consists of analysis of contemporary life in both the local community and in society at large, classifying it into health, family, recreation, vocation, religion, consumption and civic activities. According to Tyler (1949:16), it is essential to note that:

The effort to derive objectives from studies of contemporary life largely grew out of the difficulty of accomplishing all that was laid upon the schools with the greatly increased body of knowledge which developed after the advent of science and the Industrial Revolution.

Tyler recommends two approaches to analyzing contemporary life. First, educational efforts should be focused on the complexity and continuous change that characterize life today in order to prevent outdated education delivery that wastes learners' time. Particular attention should be paid to matters of prominence in current affairs, so that learners can be prepared to respond adequately to contemporary conditions. Secondly, students critically need to train specific aspects of the mind with a view to enabling them to meet life on equal terms which students would be more likely to do if they can see the relevance of the instruction they receive to existing conditions around them. That is, (1) life and learning situations must be similar, and (2) students must be given the opportunity to put into practice what they learn at school. Tyler (1949) sees no material difficulty in meeting these conditions, hence their use as criteria to determine learning objectives. Tyler warns, however, that contemporary activities are not necessarily indicative of relevance for the purpose of formulating learning objectives simply because the activities are contemporary: it stands to reason that activities may be contraindicative for educational purposes and should therefore be selected with due circumspection. It should be noted too that essentialist critics consider the importance attached to contemporary life as an instance of the cult of "presentism". The essentialists contend that life is dynamic and continually changing. Therefore, it is not advisable to prepare students to solve only contemporary problems, because future problems will be different and

students will be unequipped, therefore, to handle such problems. A related criticism is that adult activities may have little if any relevance to children and should therefore also be discounted for lack of specific relevance.

- Finally, educational objectives are formulated by addressing specific disciplines or by cutting across disciplines. In this regard Tyler (1949) emphasizes the role of subject specialists, who may be able to suggest how their subjects can contribute to the education of young people, who are not necessarily going to be specialists in their field.

It is important to note that once general objectives have been identified, the curriculum planners have to consider the suitability of the objectives in relation to the educational and social philosophy of the school, and in relation to the psychology of learning. As noted by Tyler (1949:5), “no single source of information is adequate to provide a basis for wise and comprehensive decisions about the objectives of the school”. The aim of this procedure is to eliminate unimportant and contradictory objectives, leaving those that are the most important and feasible. Following this process, the general objectives are transformed into specific instructional objectives, in the following stages:

2. *Selection of learning experiences*

The learning experiences referred to are activities that should be undertaken by students in the teaching and learning process to achieve prescribed learning objectives aimed at developing learners’ thinking skills (concepts), helping learners to acquire information (skills), and developing social attitudes and interests (values).

3. *Organization of learning experiences*

Tyler (1949), Marsh and Stafford (1988) as well as Lovat and Smith (2003) suggest that the organization of learning experiences should integrate curriculum horizontally and vertically. Horizontal integration is characterized by linking what is taught in one subject to another, breaking down the compartmentalization of knowledge. Vertical integration consists in enriching

previous learning experiences or knowledge, or in constructing new knowledge in succeeding lessons units, grades or years.

4. *Evaluation of learning experiences*

It was noted that the evaluation of learning experiences based on established learning objectives should occur throughout the total planning exercise at regular intervals and not exclusively as the final stage of teaching and learning. The aim is to determine whether learning outcomes are being or have been achieved.

Summing up, the Tyler model consists of the following elements: objectives, activities (learning experiences), organization of activities, implementation of the activities and evaluation. Similarly, this model is premised on a deductive approach to curriculum development. The Tyler model is also called the 'objective model', the 'linear model' or the 'ends/means model' (Marsh & Wills, 2003:72; Lovat & Smith, 2003:114).

This model is considered the best by many curriculum planners, with particular reference to planning the various phases of outcome-based learning (Oliva 1992; Lovat & Smith 2003). However, some critics have censured it for being linear, oversimplified and technocratic (Ornstein & Hunkins, 1993; Tyler, 1977) emphasized the importance of the student's active role in the learning process and non-school areas of learning as critical considerations in curriculum planning and development (*cf.* Marsh & Stafford 1988:9). The reasoning behind these emphases is that the development of higher-order thinking skills should be encouraged by designing a curriculum that is rich in natural complexity and that teaching of the curriculum should be done with due recognition of the pattern detecting mechanisms of human that is, delivery should take optimal advantage for these mechanisms (Tyler, 1977; Dool, 1993).

2.5.4 Summary: some personal remarks on curriculum models

Oliva (1992) correctly notes that models are not perfect and cannot show every detail and nuance of a process as complex as curriculum development. Ornstein and

Hunkins (1993:188) note in this regard that models have disadvantages: “They can (1) invite overgeneralization, (2) entice people into committing logical fallacies, (3) show the relationships between variables incorrectly, (4) exhibit faulty assumptions about constructs, (5) stress invalid data, and (6) turn useful energy into nonproductive activity.” Despite these potential shortcomings, however, curriculum models are important tools to guide curriculum developers, provided they use the models with due circumspection. In this regard, Ornstein and Hunkins (1993:188) note that “models aid comprehension and theory building. They are useful for economically organizing and explaining vast amounts of data.” Likewise, Marsh and Willis (1999:98) emphasize that “subtheories and models can provide useful, detailed perspectives on some particulars of the curriculum in action, but not the total”.

As far as could be ascertained, curriculum development models are means of mobilising the curriculum approaches outlined in section 2.3. The models present both similarities and differences. For instance, the Taba curriculum development model, unlike Tyler’s, distinguishes the learning experience from the content of the learning experience. In fact, a learning experience should be seen as a unity that encapsulates learning content. This distinction, as noted by Lovat and Smith (2003) is neither useful nor tenable. Moreover, Marsh and Stafford (1988) classify Taba’s model as one which simultaneously includes descriptive and prescriptive elements, while Tyler’s model appears to be essentially prescriptive. Nevertheless, it is also important to note that the value of a specific model is determined within the context of use, since it assumes a certain purpose. The usefulness of any curriculum model should be therefore judged according to the specific context and purpose its use, and not on the grounds of intrinsic superiority. In fact, no model is simply inherently superior to other models. The approaches most commonly adopted to curriculum design are constructivism, deconstructionism or postmodernism. Doll Jr (1993:26) contends that Tyler’s strategy is consonant with the new era of intellectual, political, social development in which we are living. In this regard Doll Jr. (1993:26) observes that:

...modern science and the industrial revolution did bring forth not only material benefits but also concepts of progress, freedom, and individual accomplishment not found in pre-modern thought. Modern thought opened up vistas not accessible by pre-modern thought. However, the operation of this thought has assumed a closed, non-

transformational frame. Hence, while it has accomplished near miracles in the fields of medicine and microbiology, it has been quite ineffective in dealing with growth, development, and personal or physical interactions looked at from a system or network viewpoint. In short, modern thought has not provided a good model for the education of human beings. Its Cartesian methodology has assumed the attainment of certainty, and its Newtonian predictability has assumed a universe stable, symmetrical, and simple in its organization.

Continuing in this vein, the same author asserts that for the most part modern curriculum thinking has tended towards the closed form of knowledge transmission, while post-modernism strives for an eclectic yet local integration of subject/object, mind/body, curriculum/person, teacher/student, us/others, et cetera. This integration is a living process; it is negotiated, not preordained, created not found. Teaching is no longer regarded as didactic in the sense of transmission; rather it is seen as guidance, assistance, stimulation, challenge and self-organization. One important aspect of Doll Jr's (1993) reasoning is that postmodernism looks to the past and simultaneously transcends it, that is, postmodernism often entails the building of the new, quite literally, on the old. Doll, Jr (1993:8) aptly remarks that "in this complex relationship, the future is not so much a break with, or antithesis to, the past as it is a transformation of it". Indeed, as Young asserts (2008:45),

Within theories of constructivism, learning is understood to be an ongoing and developmental process of active meaning-making undertaken by the learner. Learning is thought to involve a process of building meaning systematically as new knowledge combines with old in a process of restructuring.

It seems, on balance, that the new curriculum development trend discussed above is in line with the conceptual curriculum model propagated by Hameyer (1991) — *Generatives Leitsystem* suggested in 1975 by Frey and Aregger. This system is intended to organize processes of research, theory building, practical problem solving, as well as curriculum development and implementation. Its underlying premises are interaction, collective learning, cooperation, and shared decision-making on common tasks. In light of these premises the *Generatives Litsystem* activates norms, attitudes, meanings, modes of collaboration, and negotiation. And noted by Hameyer (1991:20), therefore, it is a conceptual curriculum model consisting of analytical, developmental, evaluative, and diverse activities that "cannot

strictly be divided or sequenced. However, those activities reappear intermittently during the process”. It appears, then, that the aforementioned warnings issued by Ornstein and Hunkins (1993) against the disadvantages of curriculum development models are justified. Thus, the curriculum is conceptualized as a process of reflective interaction characterized by Hameyer (1991:21) as “a multilevel cycle of mutual learning and sustained improvement which occurs stepwise and cooperatively”

In the analysis of curriculum implementation an important question to address is: Which curriculum development model was adopted to guide the implementation process? Or to what extent does the new curriculum evince coherent procedures enabling successful implementation? Or better, what is the nature of the new curriculum and to what extent does it predetermine the process of its implementation?

Answers to these questions are sought in chapter three below with due recognition of the stricture notedly Marsh and Willis (1999) that the main consideration is the continuing process rather than a particular result, and that process should link thought with action, in the sense that the planned curriculum should correlate directly with the implemented curriculum, while both should correlate with the experienced curriculum as discussed in section 2.2 above.

With regard to the Mozambican experience of curriculum development models as discussed in 2.5.3 above it should be noted the inductive approach of the Taba model that is more suitable for countries where school-curriculum development is decentralized. This is not the case in Mozambique. Obviously, the “local curriculum” introduced in the context of the new curriculum of basic education in Mozambique is an important step towards realistic and careful decentralizing of school curriculum development. Incidentally, one of Fullan’s (1993) eight basic lessons about educational change emphasises that neither centralization nor decentralization offers a full and final solution for the introduction of educational and therefore curriculum change. Top-down and bottom-up strategies should therefore be combined. In fact, before introducing the new curriculum of basic education, as a result of the general policy of the country in socioeconomic, political and cultural domains, Mozambique had a highly centralized education system, including school curriculum. Following the

changes that took place in the country, for example, and especially, adoption of a multiparty democratic system in 1990, an important consideration that could not be ignored was that Mozambique is a large country with an area about 800 000 square kilometres and about 2500 km of coastline. It is not a homogeneous country, being characterized by different cultural, economic, social and geographic features with varying influences on education, especially on curriculum (see introduction to chapter four). Consequently, with a view to honouring the principle of ensuring equal access to basic education for all, Mozambique opted for a school curriculum consisting of two components: a core curriculum and a local curriculum. The core curriculum is centrally planned by INDE and constitutes 80% of the curriculum. The local curriculum is planned locally (at school level) and constitutes 20% of the curriculum (see section 3.3.5 below). In light of these developments, the Taba Model is appropriate for the Mozambique situation.

The Saylor, Alexander, and Lewis Model as well as Tyler model is deductive — both start by defining major educational goals and specific objectives. A careful analysis of other steps of the Taba model, may enrich and improve the experience of curriculum development in Mozambique. Chapter three will be concerned with policy regarding the new curriculum, its structure, as well as the strategies for its implementation, with particular reference to management, monitoring and support at local as well as a national level. It proceeds, therefore, from the theoretical premises laid down in this chapter (chapter two) critical guidance. As noted by Fullan (2001:49) , these premises are used “... less as instruments of ‘application’ and more as means of helping practitioners and planners ‘make sense’ of planning, implementation, and monitoring”.

CHAPTER 3

THE STRUCTURE, NATURE AND INTRODUCTION OF THE NEW BASIC EDUCATION CURRICULUM (BEC) IN MOZAMBIQUE

3.1 INTRODUCTION

Chapter two of this study embraced a theoretical and conceptual exposition of the premises that underpin curriculum development and the associated approaches. Chapter two, therefore, provides the basic background required to understand and interpret the present chapter which, in turn, provides an overview of the nature, structure and implementation of the new basic education curriculum in Mozambique. It also reviews the policy and implementation strategies involved in setting up the curriculum, with particular reference to resources, management, monitoring and support at local and national levels.

This chapter reviews the overall process of curriculum development, with special reference to the main conceptual features and practical initiatives within the scope of the new curriculum, and more particularly, the *intended curriculum*. Thus, chapter three explores the possibility of effective implementation of the new curriculum in light of contemporary and pertinent lessons drawn from relevant literature. This preliminary information is taken into consideration in analysis and discussion of results of the empirical investigation in chapter 6. Therefore, by comparing the *planned curriculum* and the *actual school curriculum* it offers valuable opportunity for critical evaluation of the first year of implementation of the new curriculum, and therefore for the articulation of pertinent recommendations with a view to further successful implementation in years to come.

3.2 THE STRUCTURE OF THE NEW CURRICULUM

The basic structure of primary education remains unchanged: seven grades divided into Lower (Grades 1 to 5) and Upper Primary (Grades 6 and 7) levels. This basic trajectory is now subdivided into three learning cycles: Cycle One (Grades 1 and 2); Cycle Two (Grades 3 to 5); and Cycle Three (Grades 6 and 7).

The introduction of the substructure of learning cycles within the general preexisting structure is explained in section 3.3, with particular reference to the introduction of semi-automatic promotion within the ambit of learning cycles. Other changes to the structure of the former basic education curriculum are explained in sections 3.3.3 and 3.3.4.

3.3 POLICY THAT INFORMS AND INNOVATIONS SUBSUMED BY THE NEW CURRICULUM

The new Basic Education Curriculum is intended to capture and entrench the objectives of Basic Education into the Education System of Mozambique as defined by the National Education System Act (Act 6 of 1992). It is also supported by the National Education Policy and Strategies for Implementation defined by Cabinet Resolution 8 of 1995, which states *inter alia*:

Primary Education is the backbone of the educational system. It derives this important position from the role which primary education plays in the process of socializing children, in transmitting essential knowledge such as reading, writing and arithmetic, and in transmitting experiences and values which are commonly accepted by our society.

The Basic Education Curriculum Plan, known as PCEB (2003: 24-40) seeks to make primary education more relevant by introducing innovations in the New Basic Education Curriculum, as discussed in detail in the following sections.

3.3.1 Learning cycles in the structure of the new basic education curriculum

These are learning units, divided into three stages, aimed at developing skills and specific competences.

- The first learning cycle (Grades 1 and 2) is intended to develop skills and competences in reading and writing, numeracy involving basic calculations: addition, subtraction, multiplication and to division; observation (e.g length estimation); basic personal hygiene and sociability rules, self-respect and preservation of environment.
- The second learning cycle (Grades 3 to 5) is intended to deepen the knowledge, skills and competencies acquired in the first learning cycle, as well

as to introduce new subjects such as social and natural sciences, including the ability to calculate surfaces and volumes.

- The third learning cycle (Grades 6 and 7) is meant to broaden the knowledge, skills and competencies acquired in the previous learning cycles and to prepare the learner for more advanced learning towards a paid occupation. English is introduced in this learning cycle.

As noted in section 3.3.7, grades are not repeated within a cycle in that progress to the end of the cycle is automatic, whereas previously the learner faced a pass/fail barrier at the end of each grade (see section 3.3.7)

3.3.2 The Integrated Basic Education Curriculum

The Integrated Basic Education Curriculum in Mozambique is the complete primary education cycle of seven grades, articulated in terms of structure, objectives, contents, didactic resources and classroom practices, devised with a view to articulated development of knowledge, skills and values in all learning areas in conjunction with extracurricular activities. The implementation of new curriculum is supported by a school evaluation system that integrates the summative and formative components. The hidden curriculum is also taken into consideration. The interdisciplinary approach has been adopted as a strategy to integrate the new curriculum expressed by Barnes (1982:124) as *integration in correlating distinct subject-matters*.

3.3.3 Curricular areas in the structure of the new curriculum

Curricular areas subsume subjects that are grouped together for the same purposes or for related purposes. This concept was developed as a corollary of developing an interdisciplinary approach to school subjects instead of adopting conventional individualized approach. The purpose of the interrelated approach was to enable and supplement mutual support. According to Rasool (1999:179) curricular areas are “learning areas organized so that learners go beyond isolated facts, make connections across disciplines and help shape a more holistic view of life”. With this in mind, the curricular areas were devised to ensure that schools offer learners a wide vision by integrating knowledge.

The integrated Basic Education Curriculum comprises three comprehensive curricular areas, namely:

- Communication Skills and Social Sciences
- Mathematics and Natural Sciences
- Practical and Technological Arts

The curricular area of Communication Skills and Social Sciences includes the following subjects: Portuguese Language, Mozambican Languages, English Language, Music Education, Social Sciences, Civic and Moral Education. The curricular area of Mathematics and Natural Sciences comprises no more than these subjects, while Practical and Technological Arts consists of crafts, visual arts and physical education subjects.

3.3.4 Mozambican languages in the new curriculum

The introduction of indigenous languages in the education system is intended to give the learners the opportunity to start their learning, reading and writing, as well as basic arithmetic, in their home language with a view to preserving and promoting the value of cultural identity, to promote awareness and respect for their rights, and to reduce the gap between home language and medium of instruction at school.

The curriculum envisages the introduction of Mozambican languages in school according to the following programme:

- Introduction in a *Mozambican Language* for the first two school years, with a gradual shift to *Portuguese* after that period. Meanwhile *Portuguese* is taught as a subject from the beginning of schooling.
- Introduction in *Portuguese* with a *Mozambican Language* as resource
- Introduction in *Portuguese* with a *Mozambican Language* as a subject

The bilingual programme was introduced in linguistically homogenous areas and was not to be compulsory.

3.3.5 Curriculum innovation

The new school curriculum comprises a Core Curriculum and a Local Curriculum. The former is centrally planned by INDE and constitutes 80% of the curriculum, while the latter is planned locally and constitutes 20% of the curriculum. The overall amount of time allocated to Core and Local curriculum is calculated on the basis of the allocated time for each subject for the duration of a year according to the Study Plan. The Local Curriculum can be an extension of the content of the core curriculum, or an addition of new topics and skills required by the community. Skilbeck (1998:134) contends in regards to the need for power devolution in matters of curriculum policy that local curriculum “is an emerging challenge to schools to take a more creative and energetic role in determining what is to be taught as well as how to teach it”.

3.3.6 New distribution of teachers according to the new Basic Education Curriculum

As with the old curriculum, the new Basic Education Curriculum requires that each class at the lower primary level (Grades 1 to 5) be taught by a single teacher. In contrast, whereas at the upper primary level (Grades 6 and 7) each of seven subjects was taught by a single teacher under the old dispensation, the new dispensation comprises eleven subjects and each class will be taught by 3 or 4 teachers, which means that each teacher has to teach more than one subject.

3.3.7 Semi-automatic promotion or normal progression

Under the new dispensation learners do not repeat grades within cycles (see above), but move automatically to the next class. The study carried out by Assis *et al.* (1999) in the context of Educational Assessment in Mozambique shows that student performance does not necessarily improve with repetition. Conversely, the risk to fail again and to drop out is high due to lack of motivation that results from failure.

The above findings agree with most educational researchers e.g. Lorence *et al.* (2002:14) who contend that “grade retention practices are ineffective in remediating the academic performance of low-achieving students”. In this regard, Manacorda (2006:2) notes that “in many developing countries grade retention policies are often

accompanied by low enrollment and high drop out”. Mozambique is no exception: before introducing the new curriculum the repetition rate, for instance at EP1, averaged 25%, while the drop-out rate at this level was estimated at 15% (ESSP, 1999-2003).

As noted by Bennell (2002:1183), “the repetition rate is a particularly good indicator of the quality of education that is offered.” The issue of quality became one of the big concerns in Mozambique. It was realized that efforts to ensure access to schooling for increasing numbers of children with a view to achieving Universal Primary Education (UPE) by 2015 would only succeed if the quality of education improved over time, while, at the same time, large numbers of new schools and classrooms were built. The new Curriculum of Basic Education in Mozambique is part of a strategy to ensure the desired quality. It, therefore, implies a new curricular organization, new content (learning experiences), innovations in teaching and learning methodologies and new methods of performance evaluation (including semiautomatic progression), all of which are now under discussion.

It is critical to note that semiautomatic progression is not a panacea for the high failure rate in Mozambican schools. It is at least a partial remedy, however, in that it allows a reasonable amount of time (within particular cycle) for poor academic performance to be brought up to standard in spite of differences in students’ rate of learning. This principle (latitude for differences) is in line with Broussard (2002:71), who asserts that “each student is different, and ...each situation is unique and must be handled with lots of thought.” Semiautomatic progression is by no means widely accepted since it is considered to be promotion that is not supported by relevant performance since students will pass regardless of teachers’ or students’ efforts, or lack thereof. Concern about this principle is not confined to Mozambique but is felt in other parts of the world on remarkably similar grounds voiced not only by parents and the public at large, but even by some scholars.

Encapsulating the arguments against automatic progression and in favor of grade repetition, Manacorda (2006:3) notes the following:

- (1) Grade retention might reinforce a student’s knowledge or discipline, with potential beneficial effects on his outcomes;
- (2) additional

exposure to teaching (repetition) might strengthen a student's background making him more apt- and hence presumably more likely- to pursue higher levels of education; (3) experiencing the penalty of repeating a grade might also make a student less likely to want to experience this again, hence creating an incentive for him to improve his school performance, possibly because of the increasing marginal cost of repeating an additional grade (this is the strongest argument of grade repetition); (4) repetition might also potentially help improve the quality of the match between the school and student. This might happen if a child's development makes him more apt to attend a certain grade at a later age or if changing peers (and possibly teachers) leads to an increase in a child's productivity.

Meanwhile, Assis *et al.* (1999) like Lorence *et al.* (2002) and other researchers argue in favour of automatic progression asserting as noted by Manacorda (2006:4) that: (1) "there is a widespread view among psychologists and members of the pedagogical profession that early grade failure does not lead to any improvement in school", but predisposes learners to drop out, with negative or non-positive consequences for their socio-emotional adjustment; (2) grade retention causes: (a) low self-esteem, probably because students are marginalized or shamed or stigmatized by peers, teachers or family to punish their failure; (b) lower expectations held by the student or those around him/her; or (c) the disincentive of "the cost of having to readjust to a new class (and possibly a new teacher) as a result of repetition"; (3) grade failure may worsen a student's school outcomes.

The researcher cannot support either of these arguments, which hinge on passing or failure. Rather: "The prime task of the education service is to promote **learning**, whether this is of young children, adolescents or adults." (Bush, 2000: vii). It is essential, therefore, to ensure that students are promoted because they have acquired the knowledge and the skills specified in their education curriculum. Automatic school progression is only meaningful in a supportive learning environment created by committed teachers who enable students at risk of academic failure to enhance learning outcomes. Incidentally, Waxman and Chang (2006:14) aptly note that:

The educational failure of students is indicative of the failure of the school to teach and connect to students' lives in meaningful ways. Re-examining the classroom learning environment may assist educators in

reorganizing the ecology of the classroom as an environment that can provide success for all students.

Ultimately it serves no purpose to pass students who have not gained the requisite knowledge and skills, unless pedagogical measures are taken to fill their gaps and improve their capacity to learn (e.g. by improving learning environment). The argument that repetition is a punishment that works as an incentive for more commitment to learning and hence improved performance does not take into consideration that “student achievement can only be enhanced when the nature of the pedagogy required is targeted with precision and implemented with rigour, and with assessment for outcomes that is in tune with the entire process” (Lovat & Smith 2003:74). Furthermore, as Dool Jr (2002:54) emphasizes, “in this new era control (discipline) is seen as being embedded within, not as lying outside or imposed on...” Thus, the student’s attitude to learning should be shaped by the interaction between student and teacher through continuous and formative assessment. If the school learning conditions do not enable effective support for all students, efforts should be made to create such conditions. Grade retention and automatic progression will make little difference on their own without supplementary pedagogical measures ensuring learning effectiveness, which leads to enhanced student performance.

3.3.8 Learner - centred approach to teaching and participatory methods

A student-centred learning approach is intended to encourage students to take more responsibility for their own learning (Scott, Buchanan & Haigh, 1997; Middlewood & Burton, 2001). Traditionally, before the new curriculum, teaching in Mozambique tended to be very formal and teacher centered. According to Assis et al. (1999:2), the curriculum had the problem of “focus(ing) mostly on memorization and mechanized procedures rather than challenging pupils to demonstrate all their skills and abilities”. Conversely, the new curriculum encourages a learner-centred approach. For example, as observed by Terwel (1999:197) who states that:

As a consequence of many years of study, researchers now know that learning through interaction is a promising option. Under certain conditions and certain purposes, forms of cooperative learning have proved to be motivating and effective.

As noted by Scott, Buchanan and Haigh (1997), therefore, the new approach encourages learners to take more responsibility for their own learning. Van der Akker (2004) warns that learner-centered approach requires exceptionally specialized knowledge of particular disciplines and a flexible pedagogical repertoire in order to respond adequately to learners' views, questions and interests. The effectiveness of the new curriculum hinges critically on fulfillment of this condition. Accordingly (ESSP, 1999-2003 and ECSSP, 2006-2010/2011), the Mozambican Ministry of Education and Culture will assign without fail the highest priority to preservice and inservice training and on building institutional infrastructure for such training and pedagogical support.

3.3.9 Brief comment on structure, policy and innovations of the New Basic Education Curriculum in Mozambique

As noted in chapter one, the structure, policy and innovations of the new Basic Education Curriculum in Mozambique were defined on the basis of consensus building following a consistent and coherent policy dialogue. This policy dialogue involved not only specialists in education, high-ranking personnel in educational administration and teachers, but also relevant stakeholders, parents and members of general public. In concert with Fullan (2001:49), the researcher concludes from the structure policy and innovations introduced with the new curriculum that Mozambique reveals “an understanding of how to get started” on the complex process of curriculum change, but on further consideration it must also be concluded that the Mozambican authorities have yet to understand “how to keep going”. The implementation strategies discussed in the next section are an important indication of such understanding. However, it should be realised that despite considerable efforts to the contrary many dissenting voices will raise the objection that they were not consulted about the process of curriculum implementation. And in fact, the findings of this study — presented in chapter five and discussed in chapter six — show that a further commitment of time and resources and is required to advocate innovations and improve the capacity of teachers and principals so that they can not only “get started” but “keep going” as part of an essentially indivisible process, to which end sustainability has to become a prominent and continuous focus of attention. Effectively maintenance of the process of curriculum change should be treated as constant renewal on par with initial impetus of start-up or “getting started”. Adherence

to this principle in practice will ensure that schools become dynamic units of curriculum change, thus attaining the curriculum objectives.

3.4 CURRICULUM IMPLEMENTATION STRATEGIES

3.4.1 Resources required for Implementation

Critical resource requirements to be prioritize in curriculum implementation strategies were: building and extension of primary-school facilities, upgrading of teacher competence in-service and teacher education (initial teacher training), mainly for the following reasons:

- The education offered at most primary schools does not extend to Grade 7. After Grade 5, therefore, have to move to another school or district. The authorities are gradually upgrading schools' capacity so that learners can complete their primary schooling at same establishment without interruption.
- About 50 000 serving teachers who received short training in a cascade model to implement the new curriculum should receive in-service-training to upgrade their competence.
- The programmes of institutions for primary teacher education were reviewed and new courses were introduced to cover the new subjects introduced by the new curriculum.

In 2002, following approval of the new curriculum framework and preparation of draft syllabi were piloted in 29 schools around the country, with due attention to their setting in urban or rural areas. At same time, private publishing houses were commissioned competitively to produce textbooks and teacher's guides.

In-service training and structural preparation of the school organization for the new curriculum were undertaken at this time. In this regard, Skilbeck (1988:144) concludes from empirical research:

The chief failing of curriculum development during the past 30 years has been the uncertainty or confusion over teacher roles and

responsibilities and the reluctance or inability to orchestrate change through the active engagement of the teaching profession and the institution of the school.

In similar vein Wenglinsky (2002:24) concludes:

Schools that lack a critical mass of active teachers may indeed not matter much; their students will be no less or more able to meet high academic standards than their talents and home resources will allow. But schools that do have a critical mass of active teachers can actually provide a value-added; they can help their students reach higher levels of academic performance than those students otherwise would reach. Through their teachers, then, schools can be the key mechanisms for helping students meet high standards.

The considerations above rightly corroborate the principle that teachers hold the key to successful implementation of the new curriculum, which means that their preparation and support must not be neglected (PCEB, 2003).

3.4.2 Curriculum change management

Since the National Institute of Education development (INDE) was mandated to oversee the envisaged curriculum transformation (see earlier) its duties included coordination of the process and ensuring that the design and development process proceeded on a consultative basis. In this regard, the directorate of INDE functioned as the Coordinating Commission for Curriculum Transformation and was assisted at central government level, by a number of management and task force committees, including: the Steering Council for Curriculum Transformation, the Steering Committee for Curriculum Transformation; the Consultative National Forum for Curriculum Transformation, the National Group for Promotion for Curriculum Transformation and Specialist task forces, including the Council for the Evaluation of School Textbooks. The Provincial Group for the promotion of Curriculum Transformation was created at the provincial level. These management bodies were constituted and tasked as follows.

Membership of Steering Council for Curriculum Transformation: Minister of Education, Deputy Minister of Education, Permanent Secretary, Provincial and National Directors of Education. Mandate: Ensure political and technical guidance

and support for the overall process of curriculum transformation.

Membership of Steering Committee for Curriculum Transformation: Directorate of INDE (Project Director — Director of INDE, Head of pedagogical Issues, Head of Teacher Training Issues, Head of Administrative Issues and Coordinator of Assessment Team); National Director of Primary Education, National Director of Technical and Vocational Education, National Director of Secondary Education, Director of Human Resources, Director of National Institute of Teachers Upgrading (IAP) and Heads of Provincial Departments of Pedagogical Issues.

The main tasks of this Steering Committee were to analyze and approve the contributions and suggestions of the National Group for the Promotion of Curriculum Transformation, drafting guidelines for the curriculum transformation process, especially for in-service teacher training and to report to the Steering Council for the curriculum transformation process.

The Consultative National Forum for Curriculum Transformation included members of the Steering Council for Curriculum Transformation, members of the Parliamentary Commission on Education, Gender and Environmental Issues, the Chancellors of Private and Public Universities, representatives of the main religious communities and two prominent political and social figures representing each province, representatives of the main NGOs, and entrepreneurial organizations and Mozambican Unions. It was incumbent on the Consultative National Forum to define the students' learning needs and to scrutinise all drafts of curriculum transformations guidelines with a view to improvement.

The National Group for the Promotion of Curriculum Transformation: Pedagogic advisers, inspectors of education, heads of schools piloting the new curriculum, heads of teacher training institutions, heads and teachers of selected schools on the basis of their successful leadership and pedagogical practices.

The main functions of the National Group were: (a) to promote the process of curriculum transformation in all provinces; (b) strengthen and enabling the provincial department for pedagogical issues with appropriate strategies for each of the phases

of curriculum transformation and respective activities; (c) conduct capacity building towards curriculum transformation management; (d) select and ensure the participation of a group of teachers in the process of writing curriculum resources materials; (e) ensure consultation on critical issues regarding the process of curriculum transformation in school circles, known as Pedagogical Influence Zones (ZIPs) and communities around the schools, including parents; (f) submit the respective suggestions to Steering Committee of Curriculum Transformation; and (g) monitor and support pilot schools and (h) and introduce the new curriculum nationwide.

The specialist task forces were technical working groups consisting of specialists in different academic disciplines such as Linguistics, Literature studies (Portuguese), Sociology, Psychology, Teaching Methodologies, Ethics, Mathematics, Natural Sciences, Physical Education, Music and Arts. Some were members of INDE subject related working groups, others were primary education teachers under the supervision of professors of acknowledged competency from the Pedagogical University and Eduardo Mondlane University. The specialists' task forces were structured and organized in accordance with the subjects forming part of the new curriculum, articulated vertically to guarantee the sequence of contents, and horizontally around learning cycles to ensure interdisciplinary integration.

The first groups were known as subject panels and the last groups as learning-cycle groups. While each subject panel joined together all specialists or teachers of the relevant subject (from Grade 1 to 7), the learning-cycle groups joined together the leaders of different subjects for each cycle. These groups were mandate to produce the framework of the new curriculum (Integrated Curriculum Plan for Basic Education) and the syllabi for subjects and learning cycles in light of recommendations of the Consultative National Forum for Curriculum Transformation.

As the name indicates, the Council for Evaluation of School Textbooks was set up to assess the quality and validate the proposal of school textbooks, including the teacher guides for the new curriculum, produced by private publishers with involvement of teachers and Mozambican specialists.

Each of the 11 provinces, including Maputo City, appointed a Provincial Group for the Promotion of Curriculum Transformation. Each group consisted of 30 members, including provincial pedagogical advisers and inspectors, selected heads of schools and of teacher training institutions, trainee teachers, primary teachers, and coordinators of ZIPs, all of whom were selected on the basis of their leadership and acknowledged pedagogical practice. The provincial groups were led by the provincial Head of Pedagogical Issues.

The main task of provincial groups was to promote and support the activities of Curriculum Transformation at provincial level, in alignment with the role of the National Group for the Promotion of Curriculum Transformation, with which they were integrated.

3.4.3 Monitoring and support of curriculum change process

Basically, the bodies of curriculum transformation management, especially at the provincial level, had the obligation to monitor and provide the necessary support to schools in the process of implementing the new curriculum. Other than the curriculum design and development roles, INDE had to fulfil the educational research function, for which it has set up the monitor group, known as an ethnographic group, and supervision group to coordinate the overall process of curriculum transformation.

3.5 NATIONWIDE IMPLEMENTATION OF NEW CURRICULUM

As indicated earlier, the implementation of the new curriculum from national to local level reflects generic characteristics of managerial and systems approaches of curriculum and of the curriculum development model proposed by Tyler (1949).

The main weakness of the nationwide curriculum transformation process, was the fact that it was conceived and executed as a specific project to be completed within a finite period, which meant that at the end of the projected period the implementation structures lost impetus or became defunct whereas as noted earlier (*cf.* 3.3.9), curriculum development has to be constantly maintained actively supported to ensure its effectiveness (Bradley, 2004; Kelly, 2004; Erickson, 2007).

Moreover, when the active involvement of top political decision-makers (e.g. Minister of Education) is inevitably interrupted by the vicissitudes of high office the coherence and sustainability of curriculum change is seriously disrupted. In Mozambique the terms of office of a cabinet minister and the head of the local UNESCO office who were involved in the design of the curriculum terminated and they were replaced in due course. Provincial directors were also replaced with considerable loss of momentum and later on also a new Representative and Head of the Local UNESCO Office. Note that the change of Minister was followed by a change of Provincial Directors, who in turn made significant modifications in the composition of the management structures at provincial level. Despite some progress made with the process of curriculum change, considerable loss of momentum occurred while the new appointees were acclimatising to the enormous demands of curriculum implementation. This situation accords remarkably with the reflections of Peretz (2003:57) on curriculum transformation as a participatory process involving diverse forces:

Closer and positive interactions between these diverse forces (powerful individuals, such as Ministers of Education, and forces in society, such as teacher or parent unions) have a synergetic effect that raises the chances of reform to succeed. Synergy between the various factors has a powerful effect on both policy adoption and implementation. On the other hand, any disruption in the positive interactions between these forces might cause the decline of the reform. The careful examination of changes in the power structure might lead to a better understanding of successes and failures of curriculum reform efforts.

It appears essential that the curriculum management bodies indicated above should be revitalized to ensure synergy and proper coordination of the general effort to implement the new curriculum. It also appears that teacher training is out of step with curriculum change and needs to be updated to meet implementation needs with the aid of in-service initiatives which are a critical requirement for appropriate capacity building. Schools therefore must be supported so that they can organize themselves to facilitate local teacher development groups and effective cooperation in making and using new curricula. Such initiatives are detailed in chapter five and six. In this regard Mohamed (1999: 168) observes:

The fact that there are obstacles to the implementation (and these are

admittedly many), is not reason to fall into despair or cynicism. The obstacles need to be turned into challenges to be overcome. Looking for possible solutions increases the chances of finding them. Seeing failure leads more easily to self-fulfilling prophecies of failure.

Despite implementation problems the process has made tangible progress exemplified by learners improved performance. Table 3.1 shows the relative improvement since introduction of the new curriculum in 2004. The national examination held at the end of Grade seven (final stage of primary education) is the critical indication in this regard.

Table 3.1: Upper-primary students' achievement in three provinces of Mozambique over the period 2002-2006

Year	Province	Pass Rate	
		Grade 6	Grade 7*
2002	Niassa	69%	59%
	Sofala	67.5%	58.9%
	Maputo City	62.9%	66.7%
2003	Niassa	61.2%	51.1%
	Sofala	71.8%	54.6%
	Maputo City	65.5%	60.1%
2004	Niassa	87.3%	79.5%
	Sofala	89.1%	77.5%
	Maputo City	94.4%	82.0%
2005	Niassa	86.3%	66.6%
	Sofala	88.5%	77.2%
	Maputo City	93.1%	79.5%
2006	Niassa	83.9%	70.3%
	Sofala	86.8%	74.9%
	Maputo City	90.3%	82.0%

Source: Mozambique Directorate of Planning in Ministry of Education and Culture

*End of learning cycle and of the Basic Education stage as a whole in Mozambique with National Exam.

The table above shows that even at Grade six, to which progression is largely automatic, a marked improvement became noticeable since introduction of the new curriculum in 2004. A similar improvement is noticeable for Grade seven, exit level of primary schooling which ends in a national examination. Before the introduction of the new curriculum the rate of approvals was around 70%. Note that the minimum average for Portuguese and Mathematics was at least 9. Before the new curriculum was introduced learners who passed the primary end examination (Grade seven) achieved 60% to 70%. The performance in Niassa province was the lowest at the time but it has improved continuously, since the introduction of the new curriculum although it is still lagging behind the other two provinces performance reflected in

table 3.1. The improved performance levels recorded for the relevant provinces since 2004 indicate lower levels of school wastage (repetition and dropout), which is cause for satisfaction although generally speaking then as Bennell (2002) notes, performance still leaves much to be desired: repetition rate is a particularly good indicator of the quality of education that is offered.

It seems justifiable, though, to conclude from the table 3.1 that the new curriculum may succeed if the shortcomings are overcome. To that end more effort is needed to improve on the gains made so far, while taking steps to overcome the obstacles to improved outcomes and effective curriculum change. The obstacles to these objectives will be indicated by analysis and discussion of the research findings in chapter six. Thus, as noted earlier, the study may offer a valuable opportunity for critical evaluation of the new curriculum by comparing the *planned curriculum* with the *actual (curriculum)* over the course of the first year of implementation. It also provides a basis for pertinent recommendations with a view to further successful implementation in years to come. Critical consideration of these recommendations and judicious implementation may contribute significantly to learners' academic performance and overall achievement at school.

3.6 CONCLUSION

Looking at overall process of the new Basic Education Curriculum development in Mozambique, we may conclude that it reflects a world trend towards democratization and improvement of quality of education. Curriculum change is an important component of education change undertaken in Mozambique as a democratic and participatory curriculum process under leadership of the INDE, involving not only educationists and teachers, but also key stakeholders such as religious organizations, unions and employers. A big challenge that emerged with this process is the feasibility of effective implementation of the new curriculum. As noted with emphasis, the pedagogical innovations included in the new curriculum will certainly require sufficiently expanded capacity if they are to succeed. What extent are manifested this capacity and will in Mozambican schools? Which factors influence them? These are fundamental issues of this research to explore following the findings presented in chapter five and discussed in chapter six (e.g. relevant determinants of successful curriculum implementation). It is important to note that

these findings refer to first year of the new curriculum implementation and in many aspects may not reveal any significant progress. However, they include important data to assist future implementation. Of course, effective implementation requires enough time and informed support. According to Fullan (2001) as well as Hall and Shirley (2001) the implementation of most educational changes is inordinately time consuming. For example, by moderate complex changes take three to five years, while the more complex changes may take five to ten years.

The next chapter, chapter four, deals with research strategies and techniques applied during the investigation to produce the findings presented in chapter five and discussed in chapter six.

CHAPTER 4

RESEARCH STRATEGIES AND TECHNIQUES APPLIED DURING THE INVESTIGATION

4.1 INTRODUCTION

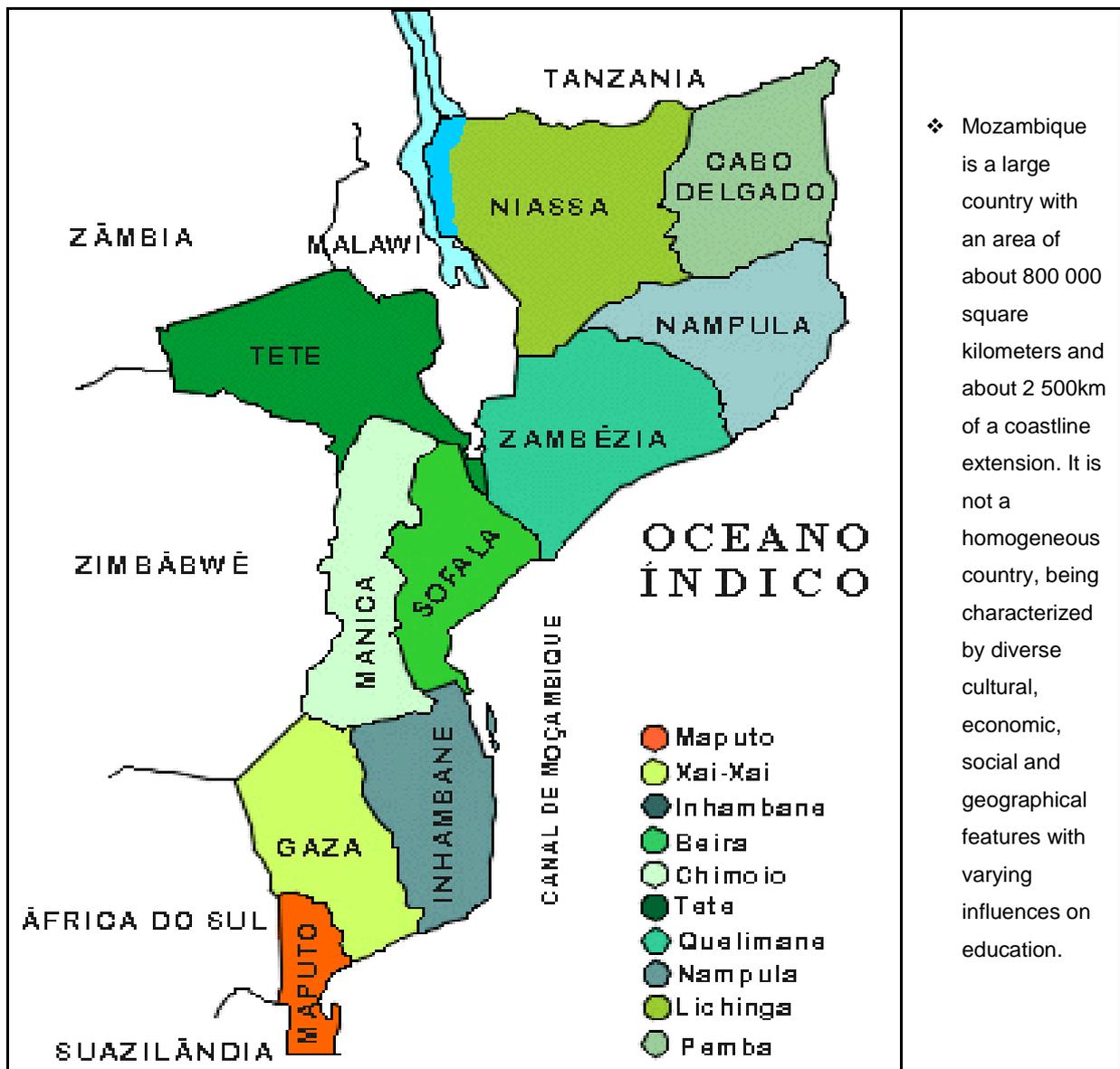
The stated aim of this research, indicated in chapter one, was to trace the progress made with implementation of the new curriculum for basic education in Mozambique during the first year after its inception. The focus of the study was **classroom practice** within the context of Basic Education Curriculum change, examining the **overall school conditions** influenced by endogenous and exogenous **school factors**. The purpose of Chapter Four is to discuss the research strategies and techniques applied during the investigation, and to provide useful insights into the quality of efforts invested in the study, and to what extent the findings of this investigation are reliable, valid and objective (Lincoln & Guba, 1985; Whipple, 1998).

Thus, Chapter Four indicates the main quantitative and statistical methods used in the study. It includes some background information on the socio-geographical characteristics of the country. This information is included to offer readers, especially those who are not familiar with Mozambique, an overview of its geographical features, the location and the characteristics of the provinces where the research occurred. Moreover, this chapter presents justification for applying a quantitative strategy to conduct the investigation, validation of the content of the questionnaire, substance and procedures of the survey, and the pilot application of the questionnaire. The subject matter of this chapter includes the research sample, statistical techniques and the calculations applied during the investigation (frequency analysis and factor analysis of the responses, the varimax rotation method, calculation of the chi-squares and statistical significance values, using the chi-square critical values table) and the application of the questionnaire.

This study consisted mainly of a survey of educators' and learners' opinions regarding implementation of the new Basic Education Curriculum in Mozambican schools.

Three provinces participated in the investigation namely, Niassa in the northern region, Sofala in the central region and Maputo city, which has the status of a province, in the southern region.

Figure 4.1: Map of Mozambique



The three provinces were selected for the following reasons:

- Niassa, the largest province in Mozambique, is the least populated and the most isolated province in the country. Available data from the 1997⁴ general population and housing census presented the following important figures for

⁴ When the study was undertaken, the available data were provided by the 1997 general census. However, the last general census was carried out in 2007. The definitive results of the 2007 general census will be available in 2009.

Niassa:

- It had about 800 000 inhabitants distributed over an area of 122 176km². The population distribution is uneven within the province. Thus, 65% of the population are concentrated in 6 districts out of the 16 that make up the province, namely: Lichinga City, 11.3%, Cuamba 16.7%, Mandimba 11.1%, Mecanhelas 10.1%, Lago 7.4%, Lichinga 8.3%. Niassa faces serious communication and socioeconomic development problems.
- As with the wider population of Mozambican, the population of Niassa Province is predominantly young. Almost 47% are not more than 15 years old, while people 65 years and older account for 2.5%. The illiteracy level of the resident population is very high. According to the census of 1997, illiteracy accounts for 69% of the population. Of this number 84% are female and 52.2% are male.
- Niassa Province has a variety of ethnic groups of which 48% from the Emakhua group. Members of this group are also found in the northern provinces of Cabo Delgado and Nampula, but also in the central of Zambezia. About 37% belong to the Ciyao group, and 8.4% belong to the Cinyanja group. The rest of population consists of minority groups under 1% each.
- The analysis of available data from the Directorate of Planning of the Ministry of Education referring to the 2003 school year in Niassa Province showed that:
 - Only 32.8 % of the total number of students (10 064) who were attending the 6th Grade were female.
 - Over 50% of students (10 064) who were attending 6th Grade were between 14 and 17 years old.
 - Only 2.4% of students who were attending 6th Grade were 11 years old (this age is theoretically the average age of 6th Grade students). Out of these only 0.9% were female.

- The female teachers for upper primary level (6th and 7th Grades) accounted for 8.2% of the total number of teachers (637) at this level.
- Of the total number of teachers referred to above, 40.1% were unqualified.

These figures are a typical reflection of the qualifications of teachers and the school attendance figures of the learners living in the province. They are also a good example of how the curriculum is perceived in the most rural, remote and furthest areas from the decision-making centres.

- Sofala Province is located in the central region of the country. It had about 1 300 000 inhabitants distributed over an area of 75 450km². Sofala has 13 districts with varying population numbers. Close to one third of the population of Sofala live in the provincial capital, Beira. Other relatively heavily populated districts are Buzi (11%), Nhamatanda (10.7%) and Dondo (9.1%).
 - The population of Sofala Province is also predominantly young. Close to 44% are not more than 15 years of age, while only 2.7% are 65 years and older. The illiteracy rate of people living in the province is also high. Based on the 1997 census, 56.2% of the population were illiterate. Almost 75% of illiterates were female while 35.9% were male.
 - The ethnic composition of Sofala is as follows: 46.9% belong to the Cisena group, about 33.5% to the Cindau group and 2.7% to the Echuwabo group. The main body of this group is situated in the central province of Zambezia.
 - Analysis of the available data provided by the Directorate of Planning of the Ministry of Education as at 2003, for Sofala Province showed that:
 - Only 36.4% of the total number of students (16 325) who were attending 6th Grade were female.
 - About 50% of students (16 325) who were attending 6th Grade were between 14 and 17 years old.

- About 8% of students who were attending 6th Grade were 11 years old, and of these only 3.7% were female.
- The female teachers for upper primary level (6th and 7th Grades) accounted for 24.4% of the total (3070).
- Of the above total of teachers, 24.9% were unqualified.

The socio-demographic and geographic characteristics described above made Sofala province a good sample of central region.

- Maputo City is the capital of the Republic of Mozambique. It had about 966 800 inhabitants in 1997 and covered an area of 355 square kilometers. The population of Maputo City is also predominantly young. Forty percent are below 15 years of age, while only 2% of the population are 65 years and older. The illiteracy rate of people living in Maputo City was relatively low compared to Niassa and Sofala. According to the 1997 general census the illiteracy rate stood at 15%. However, as in other parts of the country, the illiteracy rate is higher among females than males. Thus, close to 23% of the female population were illiterate as opposed to 7.1% of males.

Maputo is a cosmopolitan city with inhabitants who come from all parts of the country. However the majority groups are Changana (about 35%) and Ronga (about 21%).

The analysis of available data according to the Directorate of Planning of the Ministry of Education for Maputo City as at 2003 showed that:

- Of the total number of students (24 441) who were attending the 6th Grade, 51.7% were female.
- Over 50% of students (24 441) attending 6th Grade were between 14 and 17 years old.
- About 10% were attending 6th Grade were 11 years old and only 5.4% of these were female.
- The female teachers for upper primary level (6th and 7th Grades) were 61.5% of the total number of teachers (3022) at this level.
- Of the above total of teachers, 7.9% were unqualified.

The characteristics of Maputo City justified its selection as sample in this study.

The 6th Grade is the first stage of the third learning cycle of primary schooling, which has been taught, so far, by one teacher for each subject. In accordance with the new curriculum, three or four teachers should teach all subjects prescribed for the third learning Cycle. It means that the same teacher should teach at least two or three subjects. This is a challenging change for teachers who have been teaching only one subject up to 2003. This will also require an appropriate new pedagogical school organization, which is not always easy to achieve.

4.2 JUSTIFICATION OF THE USE OF A QUANTITATIVE RESEARCH STRATEGY DURING THE COURSE OF THE INVESTIGATION

4.2.1 Introduction

Before justifying the decision to apply a quantitative research strategy for the investigation, it seems pertinent to highlight briefly the old, but intensely ongoing, debate on qualitative versus quantitative research methods for the social sciences, including the education and more specifically the curriculum. As William (2006) points out, this debate has been pursued more persistently and fervently than any other methodological issue relating to social research. Three main groups have emerged from the debate. The first are in favour of qualitative and against quantitative research (Epstein, 1988; Sherman & Reid, 1994). Conversely, the second are in favour of quantitative and against qualitative research (Haworth, 1984; Reid, 1987). The third group are in favour of combining both qualitative and quantitative methods, advocating a “mixed methods” approach (Taylor, 1977; William, 2006).

According to Neill (2007), Lincoln and Guba (1985), and Marshall and Rossman (1980), the heart of the quantitative-qualitative debate is philosophical, reflecting different epistemological and ontological assumptions, which will become evident in the following discussion. Concerning epistemological assumptions, for instance, the apologists of qualitative inquiry argue that the best way to understand any phenomenon is to observe it in its context. They aver that human behaviour is significantly influenced by the environment in which it occurs. It is fluid, dynamic, situational, social, contextual and personal. Therefore, the human behaviour must be studied holistically (i.e. in context), rather than being manipulated by numbers. The

apologists of quantitative research assert that human behaviour is regular and predictable and susceptible to generalization, while the advocates of the mixed research admit that behaviour is only partly predictable and susceptible to generalization. Regarding ontological assumptions, for example, the defenders of qualitative research assume that the realities are multiple, constructed and holistic, while the apologists of quantitative research emphasize that the reality is single, tangible and fragmentable. That is to say, the defenders of qualitative research assert that each of us experiences a different reality from our point of view. The researcher is the gathering instrument and the data are in the form of words, pictures or objects. So, in conducting research it should be realized that the perceptions about reality are subjective, personal and socially constructed. They refuse the idea that social sciences such as education, including curriculum development, can be studied by using the methods applied in natural or physical science. The apologists of quantitative research argue that different observers agree given the objectivity and measurability of tools used, such as questionnaires or equipment to collect numerical data of what is observed. They argue further that both the natural and social sciences endeavour to create testable and confirmable theories that explain phenomena by showing how they result from theoretical assumptions. The apologists of quantitative research criticize qualitative research for employing an inside perspective, which makes it a highly personal and subjective research. In contrast it can be argued that the aim of qualitative research is to produce a complete and detailed description, making the qualitative data meaningful, although time consuming, and less generalizable. Meanwhile, the purpose of quantitative research is to classify features, count them, and construct statistical models in an attempt to explain what is observed. It is assumed that quantitative data are more efficient with testable hypotheses, in spite of the fact that it may miss contextual detail. It is also noted that for qualitative research, the investigator may only know on the surface what he/she is looking for at the outset. Conversely, the quantitative researcher implies that the researcher knows clearly and deeply in advance what he/she is investigating. Moreover, it is believed that the qualitative research is advisable at the inception of research projects, while quantitative research is recommended for the latter stages of research projects.

Thus, the contention that one methodology is better than another in any final sense appears to be wrong. Trochim (2006) observes that the qualitative versus quantitative debate is “much ado about nothing”. He notes that to state that one research method is better than another is simply a fallacy, since both are employable to address almost any conceivable research topic. He adds that, on the one hand, all qualitative data can be coded in meaningful numerical values, that is, quantitatively. On the other hand, without understanding numbers themselves, one cannot interpret or explain them. That is, all numerical information implies numerous judgments about the meaning of those numbers or figures. Whipple (1998:2) emphasises that:

Every discipline and methodology has its uses. The implication that one is better than another is like saying that one’s sense of taste is in some way superior to sight, touch or hearing. You can’t taste the way something sounds or hear the way something looks. It is the same with research.

In view of the debate on qualitative and quantitative methods in social science research, specifically regard to curriculum in the educational field, the researcher concluded that both methodologies have advantages and disadvantages. In many studies, both qualitative and quantitative methods can be applied simultaneously. Whipple (1998) notes that once the study field or subject is selected and, more specifically, the research questions are posed, the appropriate research methodology is determined in accordance with the properties of the population under investigation.

4.2.2 Justification of the quantitative design

This research was undertaken based on a national sample taken from representatives of the selected three provinces, well isolated from each other; namely Niassa to the north, Sofala at the centre and Maputo City to the south of the country. Simultaneously, there was a need to ensure that the sample is large enough, involving a reasonable number of participants in proportion to the population number for each target group: principals, teachers and learners from schools teaching Grade 6 (see paragraph 4.4).

The aforementioned premises led the researcher to adopt a survey questionnaire in view of the need to gather opinions from a large sample of principals, teachers and learners from the selected three provinces. The object of opting for a large sample

was to conduct factor analysis so that the opinions could be clustered to form group factors that as observed by Reymont and Joreskog (1993:71) “[...] will usually account for approximately the same amount of information as do the much larger set of original observations.”

Financial restraints also suggested the use of a quantitative design during the collection of data, to save on travelling expenses and the need for accommodation during field work. The survey questionnaire was designed to be applied by research assistants. Colleagues at the school inspectorate, and pedagogic supervision at provincial level voluntarily collaborated in the process of data collection.

Among other aspects discussed with these colleagues beforehand, it was emphasised that all questions were to be properly answered by all participants, especially by the learners, and that all completed questionnaires would be returned after being computed.

Time constraints also led to the selection of the quantitative research strategy for this study. Applying survey questionnaires for data collection takes less time than using qualitative methods.

Furthermore, a survey questionnaire was used in light of the observation by Gorard (2003:93):

If the respondents complete the survey from themselves there are several key advantages. There is much less of the reactivity effect or interviewer bias that can be created by the presence of someone who has a vested interest in the results. It can be arranged that the responses are not only confidential (which is standard practice) but also anonymous (so that even the researcher does not know to whom each returned form belongs). This can help create an atmosphere of trust, and therefore lead perhaps to more truthful answers.

In the cover letter (see Appendix A) of the survey the respondents were informed about its purpose and content. It was emphasized that participation in this research project is voluntary and confidential. Thus, the forms did not require the identification of respondents and the answers were given by crossing the boxes that best described the respondent’s opinion. There was no possibility of recognizing who

completed the form through his/her handwriting. The research sample is provided in section 4.4.1.

4.3 THE CONTENT VALIDATION OF THE QUESTIONNAIRE

The questionnaire that was used in this study consisted of items adapted from Bernhardt's (1999) survey questionnaires. These questionnaires ideally fit the curriculum design, development and implementation components, because they were originally conceived for the school portfolio, providing valuable insights into a comprehensive framework for school improvement, which is the essence of curriculum change or educational change, broadly speaking. The questionnaire items include major elements of change towards school restructuring and reculturing, such as effective leadership, communication, dealing with parents and the community in general, building of consensus among members for solutions to problems raised in the process of overall school improvement and innovative classroom practices. Therefore, it covers all the main components dealt with in the theoretical framework of this research, revealing a high content validity.

The researcher asked for and obtained copyright permission from Dr. Victoria L. Bernhardt to adapt the questionnaires (see Appendix C). The survey questionnaire was adapted for two reasons:

- The researcher found the Bernhardt survey questionnaires well-suited for the research questions concerning implementation of the New Basic Education Curriculum in Mozambican Schools.
- These instruments had been piloted and used successfully before, therefore valuable hindsight was gathered for the investigation.

Pallant (2005:3) suggests that “the data are only as good as the instrument that you used to collect them and the research framework that guided their collection.”

The questionnaire was adapted to meet principals', teachers' and learners' circumstances (e.g. training, appointment or staffing arrangements, qualifications, as well as the curriculum framework, and the subject content devised for Mozambican learners). Moreover, since Portuguese is the official language, the medium of instruction and the main vehicle of communication in Mozambique, the adapted

questionnaire, originally in English, was translated into Portuguese (see Appendices B and C).

Given the lessons learned from the literature about curriculum implementation around the world, the research questions and the conceptual framework discussed in Section 1.4 were taken into consideration in the process of designing the questionnaire so that it (the survey questionnaire) would reflect the purpose of the study.

Thus, the questionnaire attempted to capture respondents' opinions concerning the seven basic contextual conditions for effective change and, in particular, for successful curriculum implementation (see section 1.6). According to Giacquinta (1998:172-173) the basic contextual conditions are: members' clear acceptance of and commitment to the need to achieve new goals and role expectations; members' ability to fulfil the new role expectations; accessibility of adequate resources; compatible organizational or social envelope surrounding the innovation. Others include the deliberate process of role **resocialization** and considerable time, coordination, support, and encouragement, as well as school leadership in assuring the presence and maintenance of these conditions. These factors are discussed in the theoretical framework in the light of research findings regarding curriculum implementation towards school improvement.

Therefore, the adaptation of the Bernhardt (1999) survey questionnaires implied:

- Formulation of the cover letter.
- The entire design of section "A" requiring biographical information.
- The selection of questions for each target group in the context of the study, including modification or suppression of some questions, to serve the purpose of the study.
- Clear and concise indication of the purpose of questions addressed to each target group;
- Organization and redesign of staff survey into sections "B" and "C" (i.e. principals' and teachers' questionnaires).
- The translation of the adapted designed instrument from English into Portuguese.

Thus, as an integral part of the survey questionnaire (see above) a cover letter was prepared requesting the collaboration of the participants and explaining the purpose of the research (see Appendix A). Furthermore, the survey questionnaire consisted of the following four sections:

Section A: Biographical information

Section A covered items 1 to 9. These items addressed the role and gender of the respondents, and the province where schools of participants were located. Additionally, it gave details of principals' and teachers' academic and pedagogical qualifications, number of years served in school management and the specific preparation for this responsibility, as well as teaching experience at upper primary level.

Section B: Attitudes of school principals regarding the impact of school leadership on principals' relationships with teachers, other staff members, students and parents

Section B comprised items 10 to 23, which elicited information regarding the impact of school leadership on principals' relationships with teachers, other staff members, students and parents. It also has the object to determine whether all school members clearly understand and are committed to realising the envisaged new goals and role expectations in the context of the new curriculum. A further object was to determine the status of coordination and management of implementation of the new curriculum and of the school restructuring and reculturing project of introducing organizational measures to meet the requirements of the new curriculum, including sharing and cooperative work schemes, et cetera).

Section C: Attitudes of teachers about school environment, organization, new curriculum and teaching as well as student learning

Section C covered items 24 to 43 and explored teachers' beliefs and attitudes about school environment, organization, new curriculum and teaching as well as student learning; teachers' ability and confidence to fulfil the requirements of the new curriculum (need for capacity building); and collaboration with parents and other stakeholders.

Section D: Effects of the curriculum on learners and learning

Section D included items 44 to 118 and addressed student beliefs and attitudes about school and learning, students/teachers relationships, students' expectations, students' learning resources and outcomes achieved by students. In brief, it covers the extent to which the new curriculum enables an effective and relevant learning environment for pupils.

4.3.1 The research sample

The research questionnaire was applied to a sample of 3 050 respondents of which 124 were principals, 221 teachers and 2 705 learners (see Tables 5.1, 5.11 and 5.24).

The participating teachers were all those who taught Grade 6 in the schools where the survey was undertaken. The principals were those managing these schools. The learners were those attending Grade 6 in these schools, provided the sample contains a fair and balanced representation of the full spectrum of students achievement levels regardless of gender. The total number of participants in each school was proportional to the total number of learners attending Grade 6 in that school.

The participants were of both sexes. Details of this participation are given in Chapter 5, sections 5.2, 5.3 and 5.4.

4.4 STATISTICAL TECHNIQUES AND CALCULATIONS APPLIED DURING THE INVESTIGATION

4.4.1 Descriptive and frequency analysis of the responses

The analysis of the data commenced with a simple descriptive and frequency analysis of the responses. As noted in section 5.1 of this thesis, basically the frequency analysis was undertaken to determine how many respondents of the different categories (principals, teachers and learners) gave each alternative response to a particular question in the scope of the research (Runyon & Haber,

1980; Howell, 1992). The reliability of a scale of questionnaires for each target group was also determined in order to find out how free they are from random error (see Appendixes D1, E1 and F1). The internal consistency expressed as a Cronbach alpha coefficient, was also calculated, taking into account that:

- The Cronbach alpha coefficient can be interpreted as the percent of variance on the observed scale that would have explanatory value on the hypothetical true scale composed of all possible items in the universe. Alternatively, it can be interpreted as the correlation of the observed scale with all possible other scales measuring the same thing and using the same number of items.
- By convention, a lenient cut-off of 0.60 is common in exploratory research; alpha should be at least 0.70 or higher to retain an item on an “adequate” scale; and many researchers require a cut-off of 0.80 for a “good scale.”⁵

Furthermore, in the interpretation of the Cronbach alpha coefficient, it was also considered that its value is very sensitive to the number of items involved in the measuring operation. Incidentally, Pallant (2005:90) notes that:

With short scales (e.g. scales with fewer than ten items), Cronbach values are usually quite low (e.g. 5), in which case it may be more appropriate to report the mean inter-item correlation for the items. Briggs and Cheek (1986) recommend an optimal range of 0.2 to 0.4. for the inter-item correlation.

4.4.2 Factor analyses of the responses

One of the objectives of the questionnaire was to elicit the opinions of respondents regarding curriculum implementation in general, and to cluster and categorize the opinions in terms of curriculum implementation principles and practices. One way to achieve this is to conduct a factor analysis on the data.

The Statistical Package for Social Sciences (SPSS 11.5) was used to undertake a statistical technique *principal component factor analysis* to investigate the interrelationships between a set of variables contained in data defined for the survey questionnaire applied in this study for each of the above mentioned targeted group.

⁵ Garson, G. David (copyright 1998, 2007). Reliability Analysis.
<http://www2.chass.ncsu.edu/garson/pa765/reliab.htm>. Retrieved date: 2007/10/11

Similarly, a Keiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test concerning the questionnaire items for each target group (Principals, Teachers and Learners dealing with Grade 6) involved in this study were calculated to:

- determine to what extent the variables belonged together (were associated); and
- verify if they were adequate for factor analysis.

According to Field (2000) the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy indicates whether a sufficient number of items are actually predicted by each factor. The results of the KMO statistic may be classified as:

- **mediocre** if the values are between 0.5 and 0.8;
- **good** if the values are between 0.8 and 0.9;
- **great** if the values are 0.9; and
- **superb** if the values are above 0.9.

According to Hinton et al. (2004:342), "as rule of thumb, if the KMO test comes out at 0.5 or higher, we can continue with the factor analysis as our data is suitable for it."

Merkle *et al.* (1998) and Yeung, Wong and Chan (2002) suggest that Bartlett's Test of Sphericity determines whether the original variables are correlated highly enough to provide a reasonable basis for factor analysis and it should be significant at $p < 0.05$.

After establishing that the basic requirements for factor analysis were fulfilled, this technique was employed. The factor analysis helped:

- to examine to what extent the respondents grasped the meaning of the items in each section of the survey questionnaire; and
- to identify the main factors that may enable successful implementation of the new curriculum.

The factor analysis collects the responses of the respondents into broad categories or clusters rendering assistance to the interpretation of the data. This process is

known as the **first-order** investigative factor analysis or exploratory factor analysis.

Stapleton (1997:2) explains that:

exploratory factor analysis is used to explore data to determine the number or the nature of factors that account for the covariation between variables when the researcher does not have, a priori, sufficient evidence to form a hypothesis about the number of factors underlying the data.

The first-order investigative factor analysis determined the related variables that could be clustered and therefore retained as a combined variables or factor. There was also sufficient evidence to form a hypothesis about the number of factors underlying the data.

A second-order or confirmatory factor analysis was then conducted to assess the validity and reliability of the number of factors isolated by way of the first-order investigative factor analysis. Cramer (2003:28) explains the purpose of confirmatory factor analysis as follows:

Whereas exploratory factor analysis is used to determine what is the most likely factor structure for the relationships between a set of variables, confirmatory factor analysis is used to test the probability that a particular or hypothesized factor structure is supported or confirmed by the data.

Gorusch (1983:27), who notes that the concept of confirmatory factor analysis is an underlying maximum likelihood factoring stresses that a “confirmatory factor analysis tests hypotheses that a specified subset of variables legitimately define a pre-specified factor.” Harman (1976:97) states that:

Lawley (1940, 1942) made a fundamental contribution to factor analysis by providing a statistical basis for judging the adequacy of the model [...], with a specified number of factors, to explain an empirical correlation matrix. His statistical test for the number of common factors is dependent upon a particular type of factor solution, namely, maximum-likelihood estimates of the factor loadings.

However, in accordance with Cramer (2003) and Garson (2006), the actual confirmatory factor analysis can be conducted using one of several structural-equation modeling computer packages such as AMOS or LISREL. In this report, the

confirmatory maximum likelihood factor analysis was alternatively applied due to technical constraints (see section 5.6). The researcher used the following criteria in selecting the number of factors retrieved from the factors analysis: **eigenvalues**, **Cattell's scree test** and **inter-item correlations**. The first two of these will now be discussed.

As noted above, after the first-order investigative factor analysis, some decisions should be made prior to undertaking the research. According to Field (2000: 459), "*one important decision is the number of factors to extract*". Cliff (1987:311) points out that

[...] the most frequently employed procedure for deciding on the number of relevant components of factors is undoubtedly the '**eigenvalues greater than unity**' rule.

Accordance to Johnson and Wichern (2002:441) "a useful visual aid to determining an appropriate number of principal components is a scree plot". Cliff (1987:313) emphasizes that "a more dignified term that carries an air of formality and statistical expertise is the 'scree test'." It is necessary to note that these authors use various names for the common criteria, also known as Cattell's scree test or simply Cattell's criteria. According to Green and Salkind (2005:313), it is of paramount importance to take into account that:

Factor analysis requires two stages, factor extraction and factor rotation. The primary objective of the first stage is to make an initial decision about the number of factors underlying a set of measured variables. The goal of the second stage is twofold: (1) to statistically manipulate (i.e., to rotate factors) the results to make the factors more interpretable and (2) to make the final decisions about the number of underlying factors.

Garson (2006), a staunch supporter of factor rotation, emphasizes that factor rotation is widely used to make the output more understandable and facilitate the interpretation of factors.

4.4.3 Varimax rotation method

The Varimax rotation method is most commonly applied to intercorrelating data sets. It establishes a clear pattern of loading, that is, it determines factors that somehow

are clearly characterized by high loadings for some variables and low loadings for others. The varimax rotation method shows which variables belong to which factors. Cureton and D'Agostinho (1983:3) note that

the factors are actually hypothetical or explanatory constructs. Their reality in the individuals of the population or sample is always open to argument. At the conclusion of a factor analysis we can only say of the factors that if they were real, then they would account for the correlations found in the sample. The converse does not necessarily follow, and different sets of factors can account for the same set of observed or counted or measured variables and their intercorrelations.

Furthermore, Cureton and D'Agostinho (1983:3) argue that: "If the variables are the items of an opinion questionnaire, the common factors will be the main underlying attitude."

4.4.4 Calculation of the chi-squares values and significance values

Before discussing the calculations of the chi-square values and ascertain the correspondent significance values or probabilities (p), the next section gives a brief description of the concept of the chi-square.

Chi-square is a statistical test of significance used to compare the observed data [f_o 's] with the expected data [f_e 's]. It is denoted by the symbol χ^2 , pronounced "kya square", (i.e. using the square of the Greek letter Chi).

Sirkin (1995:353) points out that:

What the chi-square test does is to look at the deviation between each f_o and its respective f_e . The greater the deviation between f_o 's and f_e 's, the larger the chi-square.

Chi-square works also by testing the null hypothesis, i.e. examining the hypothesis that there is no difference or no effect between groups with regard to some measured characteristics or properties. In other words, it used to compare proportions or ratios, determining whether the proportion of occurrences of some characteristics or properties in one data sample is significantly greater or not than the proportion of the

same characteristics or properties. An illustrative example is given following the method of chi-square calculation discussed below.

The chi-square (χ^2) value can be calculated by applying the following formula:

$$\sum_{i=1}^k \frac{(O_i - E_i)^2}{E_i} \quad (6), \text{ where:}$$

O_i = Observed frequency in a cell

E_i = Expected frequency in a cell

k = Maximum number of cells of each category

Applying this formula obviously means that both the observed and the expected frequency must be known. The observed frequency (O) becomes known during data collection. The expected frequency is determined on the basis of previous experiences. The following mathematical formula is also applied for calculation of expected frequency:

$$E_{ij} = \frac{T_i \cdot T_j}{N} \quad (7), \text{ whereby:}$$

- E_{ij} is the expected frequency for the cell in the row i -th and the j -th column.

T_i is the total number of subjects in the i -th row.

T_j is the total number of subjects in the j -th column.

N is the number of subjects in the whole table.

An illustrative example is given in Table 4.1 of the statistical technique used to calculate the chi-square and significance values.

⁶ **Source:** Based on the formula used by Sirkin (1995:359), by Frank and Althoen (1994:625) and by Runyon and Haber (1980).

⁷ **Source:** Based on the formula used by Sirkin (1995 :347) and Frank and Althoen (1994:642).

Table 4.1: Comparison of opinions expressed by students from the three provinces who participated in the study about safety in their schools

			I feel safe at this school					Total
			Strongly Dis-agree	Dis-agree	Neutral	Agree	Strongly Agree	
Province	Niassa	Observed Number (O)	24	10	19	80	251	384
		Expected Number (E)	33,9	33,2	34,5	104,9	177,4	384,0
		% within province	6,3%	2,6%	4,9%	20,8%	65,4%	100%
	Sofala	Observed Number (O)	84	77	83	424	651	1319
		Expected Number (E)	116,5	114,1	118,5	360,3	609,5	1319,0
		% within province	6,4%	5,8%	6,3%	32,1%	49,4%	100%
	Maputo City	Observed Number (O)	131	147	141	235	348	1002
		Expected Number (E)	88,5	86,7	90,0	273,7	463,0	1002,0
		% within province	13,1%	14,7%	14,1%	23,5%	34,7%	100%
Total		Observed Number (O)	239	234	243	739	1250	2705
		Expected Number (E)	239,0	234,0	243,0	739,0	1250,0	2705,0
		% within province	8,8%	8,7%	8,7%	27,3%	46,2%	100%

The table shows how many participating students from the three provinces expressed opinions regarding safety at their schools: hypothetically the observed number (O) as well as the expected number (E) of students should correspond to each opinion. As noted above, the observed number of students presents no difficulty, since it is immediately obtained by counting the participating students in the research. The expected number is determined from previous experiences. The software applied for the study (SPSS 11.5), once the observed data are introduced, automatically indicates the corresponding expected data, which we may check by

using above-mentioned the formula $E_{ij} = \frac{T_i \cdot T_j}{N}$, as follows:

Province	Strongly Disagree	Disagree	Neutral	Agree
Niassa	$E_{11} = \frac{384 \cdot 239}{2705}$	$E_{12} = \frac{384 \cdot 234}{2705} = 33,2$	$E_{13} = \frac{384 \cdot 243}{2705} = 34,5$	$E_{14} = \frac{384 \cdot 739}{2705} = 104,9$
Sofala	$E_{21} = \frac{1319 \cdot 239}{2705}$	$E_{22} = \frac{1319 \cdot 234}{2705} = 114,1$	$E_{23} = \frac{1319 \cdot 243}{2705} = 118,5$	$E_{24} = \frac{1319 \cdot 739}{2705} = 360,3$
Maputo City	$E_{31} = \frac{1002 \cdot 239}{2705}$	$E_{32} = \frac{1002 \cdot 234}{2705} = 86,7$	$E_{33} = \frac{1002 \cdot 243}{2705} = 90,0$	$E_{34} = \frac{1002 \cdot 739}{2705} = 273,7$

Province	Niassa	Sofala	Maputo City
Strongly Agree	$E_{15} = \frac{384.1250}{2705} = 177,4$	$E_{25} = \frac{1319.1250}{2705} = 609,5$	$E_{35} = \frac{1002.1250}{2705} = 463,0$

Table 4.2: Summary of results of expected frequencies of opinions expressed by participating students from three provinces about safety in their schools (calculated by using the relevant formula for each province)

Provinces	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Niassa	33,9	33,2	34,5	104,9	177,4
Sofala	116,5	114,1	118,5	360,3	609,5
Maputo City	88,5	86,7	90,0	237,7	463,0

The results presented in Table 4.2 are consistent with the expected numbers or frequencies indicated in Table 4.1 computed automatically using Statistical Package for Social Sciences (SPSS 11.5) software.

Now that the observed and expected frequencies are known the chi-square values can be calculated according to the relevant formulas (see above). Table 4.3 presents the calculation of chi-square values. The respective main data are shown in bold.

Table 4.3: Chi-Square values comparing opinions expressed by participating students from three provinces about safety in their schools

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Niassa	2,89115	16,21204	6,96376	5,91048	30,53529	62,51272
Sofala	9,06652	12,06319	10,63502	11,26197	2,82567	45,85237
Maputo City	20,4096	41,93875	28,9	5,47201	28,56371	125,28407
χ^2	32,36727	70,21398	46,49878	22,64446	61,92467	233,64916

Lowry (2007:5)⁸ writes the following on degree of freedom:

Degree of freedom, **df**, is simply an index of the amount of random variability, mere chance coincidence that can be present in a particular situation. Its closest literal translation would be something along the line of “degrees of arbitrariness”.

⁸ Lowry, Richard (2007). Chi-square procedures for the Analysis of Categorical Frequency Data. Part 1. Available from <http://faculty.vassar.edu/lowry/ch8pt1.html> . Date retrieved : 10/5/2007.

Degrees of freedom (df) are therefore the number of values that are free to vary after restriction has been imposed on the data and according to Sirkin (1995:351-352),

for any size table, we may obtain the degrees of freedom from the following formula:

$$df = (\text{number of rows} - 1) \cdot (\text{number of columns} - 1).$$

Looking at the example given in Table 4.1, we see that there are three rows and five columns. Thus, the $df = (3-1) \times (5-1) = 2 \times 4 = 8$.

As we have already calculated the degrees of freedom, we may use the table of critical chi-square values, as indicated above. Traditionally or conventionally most scientists assume that the difference between two groups is of such magnitude that it would occur randomly less than 1 out of 20 times ($p < 0,05$). This cut-off value ($p < 0,05$) is also known as the *beta confidence level*. In the present case, both groups vary significantly, that is, the null hypothesis (H_0) of no difference is rejected. Traditionally, if greater confidence in the results is desired, then most scientists choose probability levels below 1 in 100 ($p < 0, 01$) or 1 in 1000 ($p < 0, 001$). This cut-off value ($p < 0,001$) is also called the *alpha confidence level*.

Vaughan (1998:126) asserts that:

The 0.05 level is common in statistical tests because most researchers agree that a sample outcome that would occur only 5% of the time (or less) if the hypothesis is true is unusual enough to warrant rejection of the hypothesis. However, other levels of significance may be chosen instead.

4.4.5 Using the chi- square critical values table (Distribution of chi-square probability)

The following procedure described by Bohrnstedt and Knoke (1988:121) was employed to estimate the levels of significance according to the calculated chi-square values as shown in the Table 4.4:

1. Choose a probability level for rejection of the null hypothesis (α level).
2. Calculate the degrees of the freedom in the table.
3. Enter the chi-square table at the corresponding row and column and observe the entry. This value for χ^2 tells you how large the

χ^2 calculated from the data table must be in order to reject the null hypothesis, while running a chance of α of making a Type I or false rejection error (i.e., rejecting a null hypothesis which really is true- no relationship exists in the population).

Table 4.4: Partial chi-square critical values table

Degrees of freedom (<i>df</i>)	Level of significance (α)			
	0.050	0.010	0.005	0.001
1	3.84	6.64	7.88	10.83
2	5.99	9.21	10.60	13.82
3	7.82	11.34	12.84	16.27
4	9.49	13.28	14.86	18.47
5	11.07	15.09	16.75	20.52
6	12.59	16.81	18.55	22.46
7	14.07	18.48	20.28	24.32
8	15.51	20.09	21.96	26.12
9	16.92	21.67	23.59	27.88
10	18.31	23.21	25.19	29.59

Source: Extracted from Appendix B of Bohrnstedt and Knoke (1988:475)

Thus, the values of χ^2 in the chi-square table referred to in step 3 are called critical cut-off values of χ^2 . In the example of a comparison of opinions expressed by participating students from the three provinces selected for the study about safety in their schools, we obtained a χ^2 value of 233.6 (see Table 4.3). For $df = 8$ and $\alpha = p = 0.005$, we should have a χ^2 equal to or greater than 21.96 in order to reject the null hypothesis. This means that in the chi-square critical values table with $df = 8$, a χ^2 of **21.96** cuts off at 0.005. In other words, having a χ^2 value larger than the critical value indicated in the chi-square critical values table, (i.e. $233.6 > 21.96$), the null hypothesis is rejected, meaning for the current example that there is a significant difference between the three selected provinces regarding participating students perception of safety at their schools. Vaughan (1998:126) stresses that:

In testing a hypothesis about categorical data, for example, we calculate a value of the test statistic chi square (χ^2) from the sample data. Then we can refer to a table of the chi square probability distribution to find out whether the probability of a value χ^2 like ours is less than or greater than alpha.

It is important to note that “the value of χ^2 is sensitive to the number of observations. The greater the number of observations, the greater the likelihood that the result will be considered significant.”⁹

The completed exercise above to calculate chi-square and the relevant critical value corresponding to p can be simplified by using appropriate statistical computer software. In the present case the chi-square value was calculated with the aid of SPSS 11.5, which allows automatic computation of data to determine the chi-square value, degree of freedom (df) and the corresponding p value, that is, the asymptotic significance. For the above example, Table 4.5 is illustrative.

Table 4.5: Chi-Square tests on comparison of opinions expressed by participating students from the three provinces selected for the study about safety in their schools

	Value	Degree of freedom (df)	Asymptotic Significance (2-sided)
Pearson Chi-Square	233,633 ^a	8	0,000
Likelihood Ratio	230,432	8	0,000
Linear-by-Linear Association	159,591	1	0,000
N of Valid Cases			

a. 0 cells (,0%) have expected count less than 5.
The minimum expected count is 33,22

The interpretation of the chi-square test table is done by focusing on the row displaying the Pearson chi-square value, degree of freedom (df) and asymptotic significance (asymp. sig.).

The values reflected in Table 4.5 (chi-square value = 233.6, the degree of freedom = 8), are the calculated values (see Table 4.3). The p -value of 0.000 indicated in Table 4.5 is an exact probability of obtaining a value greater than or equal to 21.96. **It is important to note that the probability in the SPSS output is not in fact zero. It is merely zero to the three decimal places displaced¹⁰.** This is due to rounding when the number is displayed. In fact, the probability is less than 0.005, that is, a risk probability below 5 chances in a thousand ($p < 0.005$), indicating that null hypothesis is

⁹ <http://music-cog.ohio-state.edu/Music829C/chi.square.html>. p.2- Date retrieved:2007/10/5.

¹⁰ Source: Chi-square. Retrieved from http://www2.yorksj.ac.uk/apps/_Uploads... at 10/28/2007.

rejected: **the three selected provinces vary significantly regarding participating students' perceptions of safety at their schools.**

4.5 APPLICATION OF THE QUESTIONNAIRE AND TIME FRAME

The survey questionnaire in Portuguese (before being used in the main study) was piloted and checked for validity by the researcher in February and March 2005. The pilot study, which involved a small representative sample of the upper primary schools in three selected provinces, was done to ascertain whether the interpretation and understanding of the questions as well as the objectivity and clarity of the research instruments were still the same as the original version adapted from English.

Then, from April and June 2005, the questionnaire was applied to the research sample with the request that respondents complete the relevant sections with due cognisance of the research objectives (see subsection 4.4.1). The three categories of respondents (principals, teachers and learners) had to complete different sets of questions as explained in section 4.3.

Six research assistants were trained in each province in anticipation of the magnitude of the data-collection task. The assistants rendered invaluable support during the project. The respondents were recruited at the researchers' request which was supported by the provincial Directors of Education and Culture, based on the pertinence, opportunity and the importance of the research theme for the education system in Mozambique. The participation was voluntary and relied on participants' awareness and understanding. Moreover, as usual in Mozambique, participation as informant in this kind of research did not depend on material inducement of any kind.

Within the period of survey application indicated above, the research assistants negotiated with the relevant schools' leadership in each province and established a calendar and timetable to conduct the survey in their schools. Thus, it was ensured that the forms were distributed, completed and collected by the researcher assistants on the same day as agreed. The researcher made the forms available to the team of provincial assistants. Envelopes indicating the name of the school and the category of participants (principals, teachers or learners) were used for collection purposes.

The Provincial Chief Inspectors of Schools undertook to send the completed forms to the researcher. For data entry and processing, to which end, the researcher sought (and gained) the collaboration of the computer section of INDE.

The respondents were also requested to analyze critically the implementation of the New Basic Education Curriculum in Mozambican Schools. It was emphasized that their sincere opinion would enable a rigorous analysis of the new curriculum implementation process. The respondents were clearly informed that it was not a simple academic exercise, but above all, an act of reflection, aimed at identifying factors conducing to the success or failure of endeavours to implement the new basic education curriculum. The findings emanating from said reflections would allow timely measures to ensure the success of said endeavours.

Informed consent to participate in the research was obtained at provincial level from the Provincial Directors of Education and Culture. The respondents were asked to cross (X) the box that best described their opinion, using the rating scale given in the form to the right of each question (Likert-type scaling). Principals and teachers took an average of one hour to complete this task while learners took about two hours.

It is important to note that the majority of learners who were involved in the study were minors (less than 18 years old). The content of the questionnaire was related to their normal daily school activities. The principals and teachers were sensitized and prepared for their active collaboration in the research, including the selection and orientation of learners to take part in this study. The principals and the teachers decided on the opportune timing of learners' participation to avoid disruption of the normal school routine.

Thus, taking into account the nature of this research, consent for learners' participation was obtained through the school leadership, including the Parents School Commission. The purpose of the questionnaire and the application of the findings were explained to the learners. The questionnaires were processed and completed so that they would not consider it a test (assessment). It is also important to note that the privacy and confidence of all respondents were treated with due respect. In Mozambique, up to the introduction of the new Curriculum for Basic Education, the only medium of instruction was Portuguese. Teachers were normally

used as enumerators to interpret or translate problematic questions into the local language for learners, especially in the rural areas. However, for purposes of this study, and in order to avoid misinterpretation of questions in such cases, enumerators were trained to administer the questionnaire and the questions were translated into the appropriate language beforehand.

4.6 RELIABILITY AND VALIDITY

Huitt (1999:1) notes that “the collecting of quantitative data (measurement) and doing research always raises the issue of reliability and validity”. The same researcher distinguishes reliability from validity by asserting that while the first is relates to the consistency of collected information (i.e. about the question: can we trust the data or findings?), while the second deals with the accuracy of information (i.e. with the question: are the data measuring what they are intended to measure?) In short: do they measure ‘precision’ (Winter, 2000), referred to by Hoepfl (1997) as ‘credibility’ and ‘transferability’? According to Huitt (1999), the research study is reliable when its replication produces analogous results, which implies that a measurement (test score) can be reliable but not necessarily valid. However, that it has to be reliable to be valid. Golafshani (2003:599) corroborates this statement, when he observes: “although the researcher may be able to prove the research instrument repeatability and internal consistency, and, therefore reliability, the instrument itself may not be valid.”

In the present study the main concern regarding reliability was to ensure the trustworthiness of the data as research instruments and of the findings while the concern regarding validity was to determine the accuracy of the data and findings in terms of precision, credibility, transferability and prediction. Therefore, a pilot study was conducted with a small representative sample of the upper primary schools in each of the three selected provinces to ascertain that the definitive interpretation and understanding of the questions (items or variables) were still the same original English version. Thus, to ensure objectivity and clarity of items the pertinent improvements were made by the researcher, before applying the main survey under present research. Respondents were assured of anonymity to encourage the respondents to be frank and accurate in their responses, as Houser (1998) observes

to avoid bias caused by desire to give socially acceptable answers, to present themselves in a positive light or what they seem to be researcher's expectations concerning their self-report. Moreover, the reliability analysis (Appendices E1, F1 and G1) shows that:

- The principals' questionnaire contained the correct number of 14 items. The Cronbach alpha value was 0,8418, value above 0,7, indicating that the scale can be considered reliable for the sample concerned.
- The teachers' questionnaire contained the correct number of 20 items. The Cronbach alpha value was 0,9142, value above 0,7, indicating that the scale can be considered reliable for the sample concerned.
- The students' questionnaire contained the correct number of 75 items. The Cronbach alpha value was 0,9257, value above 0,7, indicating that the scale may be considered highly reliable for the sample at issue.

The following facts are apparent from the column labeled **“Corrected-Item-Total Correlation”** (Appendices D1, E1 and F1):

- Regarding principals and teachers, no value may be taken as low value (i.e. less than 0,3), indicating good degree to which each item correlates with the total score.
- Concerning students, however, 11 items, namely I9.3V46, I9.11V5, I9.28V1, I9.28V2, I9.28.V4, I9.28.V5, I9.28.V6, I9.29.V4, I9.30V2, I9.31.V2 and I9.32.2 are items with low values, i.e. less than 0.3, indicating that the items are measuring something different from the scale as a whole (Pallant, 2005:92). Nevertheless, considering the number of items comprising the research instrument relate to students (75), the consistency of the data remains valid.
- The accuracy of the significance level was determined from the findings by using package software applied in this study as well as the manual calculation based on pertinent formulas (see example in 4.5.4). The two strategies lead to results, which ensure their validity. Finally, the triangulation involving quantitative analysis, factor analysis and the exploration of the relevant literature on curriculum implementation corroborate the data and findings of the study, thus ensuring its reliability and validity as shown in Chapters five and six of this report.

4.7 SUMMARY

Chapter Four contained a discussion of the research strategies and techniques applied during the investigation, producing useful insights into the quality of effort invested in the study and the reliability and validity of the findings of the research. The next chapter will report the main findings of the study with due reference to the strategies and techniques expressed in Chapter Four.

CHAPTER 5

REPORTING AND ANALYSES OF THE EMPIRICAL DATA

5.1 INTRODUCTION

Following the methodology presented in chapter four, chapter five is divided into two parts: A and B. Part A deals with frequency analysis of the responses while part B is concerned with the factor analysis of the data. The purpose of this chapter is to provide the main results obtained in the sequence of the current study. The discussion of the results of the study is reserved for chapter six. However, some pertinent comments on the results are made at certain stages of the chapter five, which draws prominent comparisons (similarities), noting differences and significances substantiated by numerous tables containing a wealth of data, and by illustrative figures. The tabulated data resulted from a frequency analysis done for each variable or item of the survey questionnaire used in conducting this research. A total of 109 items were examined: 14 items for principals, 20 items for teachers and 75 for learners (see appendices D1, E1 and F1). Obviously, besides tables reflecting disaggregated items to get an overview, the results of the frequency analysis also had to be tabulated to reduce the bulk of the text only the most essential data were included and the rest were relegated to an appendix to ensure access to comprehensive information (e.g. tables of disaggregated items).

The use of factor analysis was explained in chapter four. Basically, the frequency analysis was undertaken to determine how many respondents of the different categories (principals, teachers and learners) each gave an alternative response to a particular question in the scope of the research (Runyon & Haber 1980; Howell 1992). Cross-tabulations and correspondent chi-squares were determined in this regard. Note that according to Foster (1998:144-145):

The chi-square test is only valid if three conditions are met. First, the data must be independent: no respondent can appear in more than one cell of the table. Secondly, no cell should have an expected frequency of less than 1. The output from SPSS tells (...) the minimum expected frequency, so it is simple to check whether this condition has

been met. If the test is not valid, (one) must either alter the data table by amalgamating categories (...) to remove cells with small expected frequencies, or collect more data. The third requirement is that no more than 20% of the Expected Frequencies in the table can be less than 5.

This criterion is also argued or suggested by many other scholars such as Huizingh (2007), Green & Salkind (2005) and Foster (1998).

In pertinent cases some categories were merged with lesser data to meet the stated chi-square criteria (*cf.* appendices D2 *cf.* D2a and E2 *cf.* E2a). However, the original data were retained to enable the reader to form personal judgements. The sample precluded the need for further data collection. Furthermore, the information lost by grouping categories in pertinent cases does not affect the main findings of the study. Runyon and Haber (1980:39) note in this regard that “some of the scores have such low frequency counts that we are not justified in maintaining these scores as separate and distinct entities”.

A. FREQUENCY ANALYSIS

5.2 RESULTS OF THE QUANTITATIVE ANALYSIS OF PRINCIPALS' QUESTIONNAIRES

5.2.1 Principals who participated in the study

Niassa, Sofala, and Maputo City principals who participated in the study numbered 124 of which 94 were males and 30 females (see Table 5.1).

Table 5.1: Provincial representation of participating principals in the study

		Province			Total
		Niassa	Sofala	Maputo City	
Gender	Male	32	45	17	94
	Female	9	15	6	30
Total		41	60	23	124

5.2.2 Academic qualifications of participating principals in the study

5.2.2.1 Inter-and provincial comparison of participating principals' academic qualifications

One (2.4%) of the principals from Niassa Province had only completed a primary school education while 13 (31.7%) had been educated to the level of junior secondary school. Twenty-six (63.4%) had earned a senior secondary qualification; and finally only one (2.4%) had a tertiary qualification (see Table 5.2).

In Sofala 16 (26.7%) principals had a junior secondary education, 19 (31.7%) had a senior secondary education and three (5.0%) had a tertiary education (see table 5.2). In Maputo City two (8.7%) principals had a junior secondary qualification, 17 (73.9%) had a senior secondary qualification and 4 (17.4%) had a tertiary qualification. Note that in Maputo City all principals had been educated beyond primary school while the vast majority had a senior secondary qualification (see Table 5.2). Comparing the qualifications of principals across the three provinces also yielded interesting results. According to Table 5.2 all but one of the Sofala principals (i.e. 94.1% of the Primary category of the sample) had only a primary education (i.e. 12.9% of the whole sample of 124) while 17 of 23 principals from Maputo City (i.e. 73.9% of the sample within Maputo City) had a senior secondary qualification (see table 5.2).

Table 5.2: Comparison of academic¹¹ qualifications of principals from the three provinces that participated in the study

			Principals' Academic Qualifications				Total
			Primary Education Qualific.	Junior Secondary Education Qualific.	Senior Secondary Education Qualific.	Higher Education Qualific.	
Province	Niassa	Number	1	13	26	1	41
		% within province	2.4%	31.7%	63.4%	2.4%	100.0%
	Sofala	Number	16	19	22	3	60
		% within province	26.7%	31.7%	36.7%	5.0%	100.0%
	Maputo City	Number	0	2	17	4	23
		% within province	.0%	8.7%	73.9%	17.4%	100.0%
Total		Number	17	34	65	8	124
		% within province	13.7%	27.4%	52.4%	6.5%	100.0%

¹¹ In the context of this thesis, for academic qualification read schooling before professional qualification gained through teacher education or by means of a training programme.

5.2.2.2 Comparison of the academic qualifications of respondents by gender

Table 5.3: Comparison of principals' academic qualifications by gender

			Principals' Academic Qualifications				Total
			Primary Education Qualific.	Junior Secondary Education Qualific.	Senior Secondary education Qualific.	Higher Education Qualific.	
Gender	Male	Number	13	26	49	6	94
		% within Gender	13.8%	27.7%	52.1%	6.4%	100.0%
	Female	Number	4	8	16	2	30
		% within Gender	13.3%	26.7%	53.3%	6.7%	100.0%
Total		Number	17	34	65	8	124
		% within Gender	13.7%	27.4%	52.4%	6.5%	100.0%

Table 5.4 illustrates that 94 male principals and 30 female principals participated in the investigation. Thirteen male (13.8%) and 4 female (13.3%) principals respectively had a primary education while 26 male (27.7%) principals and 8 female (26.7%) principals had a junior secondary academic qualification.

Further, 49 male (52.1%) and 16 female (53.3%) had a senior secondary qualification; and finally six male (6.4%) and 2 female (6.7%) principals had a tertiary academic qualification.

In a nutshell, the difference between male and female principals' academic qualifications is statistically insignificant at all recorded levels. Table 5.5 cf 5.5a, confirms this finding, giving both the Pearson chi-square and the Likelihood ratio a value of 0.990, which is greater than 0.05, the statistical significance cut-off for chi-square tests.

Table 5.4 a: Comparison by gender of participating principals' academic qualifications (after merging cells together with an expected frequency below 5)

			Principals' Academic Qualifications			Total
			Primary Education Qualific.	Junior Secondary Education Qualif.	Senior Secondary Education Qualif.	
Gender	Male	Number	13	26	55	94
		% within Gender	13,8%	27,7%	58,5%	100,0%
	Female	Number	4	8	18	30
		% within Gender	13,3%	26,7%	60,0%	100,0%
Total		Number	17	34	73	124
		% within Gender	13,7%	27,4%	58,9%	100,0%

Table 5.5: Chi-square tests on gender-based comparison of participating principals' academic qualifications

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	0,021(a)	3	0,999
Likelihood Ratio	0,021	3	0,999
Linear-by-Linear Association	0,018	1	0,894
N of Valid Cases	124		

A 2 cells (25,0%) have expected count less than 5.
The minimum expected count is 1,94.

Table 5.5a: Chi-square tests on gender-based comparison of participating principals' academic qualifications (after merging cells together with an expected frequency below 5)

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	0,021(a)	2	0,990
Likelihood Ratio	0,021	2	0,990
Linear-by-Linear Association	0,017	1	0,896
N of Valid Cases	124		

a. 1 cells (16,7%) has expected count less than 5.
The minimum expected count is 4,11.

5.2.3 Training in school management

Table 5.6 provides a summary of the total training principals had in school management or related field specialization. Forty principals (32.3%) indicated that they had regular or formal training in school management, while 47 (37.9%) stated

their managerial expertise had been gained from in-service experience. Participants in the study numbered 124.

Table 5.6: Comparison of principals' school management training in three participating provinces

			Principals' Training in School Management			
			Regular/Formal Programmed	Self-training	Induction Workshop	Total
Province	Niassa	Number	16	17	8	41
		% within province	39.0%	41.5%	19.5%	100.0%
	Sofala	Number	16	22	22	60
		% within province	25.0%	36.7%	36.7%	100.0%
	Maputo City	Number	8	8	7	23
		% within province	34.8%	34.8%	30.4%	100.0%
Total		Number	40	47	37	124
		% within province	32.3%	37.9%	29.8%	100.0%

Table 5.6 shows that of the 40 principals who indicated that they had regular or formal training in school management, 16 (40%) were from Niassa, 16 (40%) from Sofala and 8 (20%) from Maputo City. Out of 47 principals who reported that they were self-taught 17 (36.2%) were from Niassa, 22 (46.8%) from Sofala and 8 (17.0%) from Maputo City.

Out of 37 (principals who participated in the research and attended induction workshops on School Management, 8 (21.6%) were from Niassa Province, 22 from Sofala (59.5%) and 7 (18.9%) from Maputo City. Notably, out 124 principals who had attended "Regular or Formal Programmed" training in School Management, 16 out of 41 (39.0%) came from Niassa; while 16 out of 60 (25.0%) came from Sofala; and 8 out of 23 (34.8%) belonged to Maputo City.

Table 5.6 shows that the majority of respondents (37.9% of the sample) were self-taught through experience in the workplace. This proportion was constant for all three provinces. The self-taught principals from Sofala numbered 22 out of 47 (46.8%). The rest underwent training by means of induction workshops, which is therefore the preponderant means of training for the sample group. By contrast very few respondents (8 out 41, i.e. 19.5%) from Niassa received training by this means (*cf.* table 5.6).

5.2.3.1 Extent of principals' experience as school managers

The investigation revealed that out 124 principals from the selected three provinces 78 had between one and five years', 27 had more than five and less than eleven years', 12 had between eleven and fifteen years' and 7 had sixteen years' experience and more. Table 5.7 presents a comparison of principals' experience as managers in schools from the three provinces included in the study.

Table 5.7: Comparison of principals' experience as school managers in the three participating provinces

			Number of years Managing School				Total
			1-5 Years	6-10 years	11-15 years	16 years and more	
Province	Niassa	Number	26	9	5	1	41
		% within province	63.4%	22.0%	12.2%	2.4%	100.0%
	Sofala	Number	43	13	2	2	60
		% within province	71.7%	21.7%	3.3%	3.3%	100.0%
	Maputo City	Number	9	5	5	4	23
		% within province	39.1%	21.7%	21.7%	17.4%	100.0%
Total		Number	78	27	12	7	124
		% within province	63.0%	21.8%	9.7%	5.6%	100.0%

It is clear from the table that the extent of principals' experience as school managers varied considerably between provinces and period categories. This finding is supported by the Pearson chi-square and Likelihood ratios of 0,006 and 0,009 respectively, both lower than 0.05, the statistical significance cut-off value for chi-square tests (see table 5.8).

Table 5.8: Chi-square tests on comparison of principals' experience as school managers from three provinces

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.979(a)	6	0,006
Likelihood Ratio	17.103	6	0,009
Linear-by-Linear Association	4.906	1	0,027
N of Valid Cases	124		

(a) 5 cells (4.7%) have expected count below 5. The minimum expected count is 1.30.

5.2.3.2 *Extent of experience as school managers from three provinces reflected by gender*

A comparison by gender of principals' experience as school managers from three provinces is reflected in the table 5.9.

Table 5.9: Comparison by gender of extent of principals' experience as school managers in three provinces

			Number of years				Total
			1-5 years	6-10 years	11-15 years	16 years and more	
Gender	Male	Number	56	22	10	6	94
		% within gender	59.6%	23.4%	10.6%	6.4%	100.0%
	Female	Number	22	5	2	1	30
		% within gender	73.3%	16.7%	6.7%	3.3%	100.0%
Total		Number	78	27	12	7	124
		% within gender	62.9%	21.8%	9.7%	5.6%	100.0%

Out 94 male principals 56 (59.6%) had between one and five years' school management experience, while 22 out 30 female principals (73.3%) fell in the same category. Twenty two male principals had six to ten years experience (23.4%), while five female principals (16.7%) fell in the same category. Ten male (10.6%) and 2 female principals had eleven to fifteen years' school management experience, while six male (6.4%) and 1 female (3.3%) had 16 years experienced and more of school management.

5.2.4 **School principals' attitudes to their leadership role in the process of curriculum implementation in their schools**

As noted in the introduction to this chapter, the attitudes of principals from the relevant provinces were examined through fourteen disaggregated variables and a corresponding number of cross-tables were therefore produced and included in the appendix. These individualized cross-tables are summarised in table 5.10.

Table 5.10: Summary of principals' attitudes to their leadership role in the process of curriculum implementation in their schools

Variables	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
V10. I try to promote student achievement under the new curriculum, by cultivating close relationship with teachers, other staff members, students and parents.	2 (1.6%)	3 (2.4%)	4 (3.2%)	39 (31.5%)	76 (61.3%)
V11. I try to promote student achievement under the new curriculum, putting in place an action plan produced collectively in school for effective implementation of the new curriculum.	0 (0.0%)	2 (1.6%)	13 (10.4%)	52 (41.9%)	57 (46.0%)
V12. I try to promote student achievement under the new curriculum, through effective professional development.	1 (0.8%)	1 (0.8%)	12 (9.7%)	57 (46.0%)	53 (42.7%)
V13. I try to promote student achievement under the new curriculum, by challenging teachers and students continuously to fulfil curriculum goals.	6 (4.8%)	9 (7.3%)	9 (7.3%)	28 (22.6%)	72 (58.1%)
V14. I try to promote student achievement in the context of new curriculum, by holding regular and productive staff meetings.	2 (1.6%)	4 (3.2%)	13 (10.5%)	52 (41.9%)	53 (42.7%)
V15. I try to promote student achievement under the new curriculum, by coordinating and managing the learning process in the context of the new curriculum.	0 (0.0%)	2 (1.6%)	8 (6.5%)	45 (36.3%)	69 (55.6%)
V16. I try to promote student achievement under the new curriculum, by promoting collaboration among teachers so that they can develop new skills by sharing professional knowledge about the new curriculum.	1 (0.8%)	1 (0.8%)	5 (4.0%)	40 (32.3%)	77 (62.1%)
V17. I try to promote student achievement under the new curriculum, by monitoring teachers' performance under the new curriculum.	2 (1.6%)	1 (0.8%)	13 (10.5%)	51 (41.1%)	57 (46.0%)
V18. I try to promote student achievement under the new curriculum, by maximizing the amount of school time used for learning under new curriculum.	4 (3.2%)	5 (4.0%)	16 (12.9%)	55 (44.4%)	44 (35.5%)
V19. I am satisfied that a new school organization is being implemented to cope with the demand of new curriculum.	2 (1.6%)	5 (4.0%)	8 (6.5%)	40 (32.3%)	69 (55.6%)
V20. I am satisfied that teachers are diligent in their endeavour to observe interdisciplinarity in the lessons plans they make according to the new curriculum.	0 (0.0%)	1 (.8%)	9 (7.3%)	41 (33.1%)	73 (58.9%)
V21. I am satisfied that the school climate is exemplified by sharing and cooperation that conduce to effective curriculum implementation.	1 (0.8%)	6 (4.8%)	8 (14.5%)	43 (34.7%)	56 (45.2%)
V22. I am satisfied that teachers are using a variety of active methods in their teaching as required by the new curriculum.	0 (0.0%)	2 (1.6%)	7 (5.6%)	50 (40.3%)	65 (52.4%)
V23. I am satisfied that the school has already developed the local curriculum.	6 (4.8%)	11 (8.9%)	20 (16.1%)	41 (33.1%)	46 (37.1%)

The figures discussed below (reflected in Table 5.10) show that respondents' attitudes to their leadership role in implementing the new curriculum in their schools were highly positive and that there were obstacles in the way of maximizing school time for learning under the new curriculum:

- Developing close relationships with teachers, other staff members, students and parents (92.8%);
- Bring into operation an action plan produced collectively in school for effective implementation of the new curriculum (87.9%);
- Rendering effective professional development program on new curriculum (88.7%);
- Challenging teachers and students continuously to fulfil curriculum goals (80.7%);
- Undertaking regular and productive staff meetings on the new curriculum (84.6%);
- Coordinating and managing learning process in the context of the new curriculum (91.9%);
- Promoting collaboration among teachers through which they were developing new skills by sharing professional knowledge regarding to new curriculum (94.4%);
- Monitoring continuously teachers' performance on new curriculum (87.1%).

On the other hand, it is worthy of consideration the high level of satisfaction of the surveyed principals concerning:

- The new school organization was being implemented to cope with the requirements of the new curriculum (87.9%);
- Considerable efforts from teachers to observe interdisciplinary principle in the lessons plans they were making as set up in new curriculum (92%);
- The use of a variety of active methods by teachers in classroom practices as required by the new curriculum (92.7%);

Maximizing the amount of school time used for learning is one of the strategies applied by the surveyed principals to promote students' achievement under the new curriculum. Only 79.9% of principals who participated in the study stated that they

agreed with this strategy. Strikingly, 20.1% of the surveyed principals implicitly expressed their dissatisfaction with the level of school climate created in their schools by way of sharing and cooperation on all issues affecting implementation of the new curriculum. It is cause for concern that 29.8% of participating principals were dissatisfied with the progress made with the design and implementation of 'local curriculum' in their schools.

Thus, a comparison of principals of the three provinces efforts to promote students' academic under the new curriculum revealed that there was no significant difference between them for all items as shown in tables on chi-squares through the Pearson chi-square and Likelihood ratio which are greater than 0.05 (see Appendix D2 *cf* D2a, tables on chi-squares). The exception to this result was identified in three cases (See Appendix D2a, tables D2a.28, D2a.20 and D2a.22, $p \leq 0.05$). The first case was concerned with the principals' level of satisfaction with their leadership role, which was expressed in the development and initial implementation of the "local curriculum". It seemed that the level of satisfaction of principals of Niassa in this regard was relatively higher than in Maputo City and Sofala. Principals from Maputo City were relatively pessimistic about the "local curriculum" development within the schools and its inception implementation. The second case referred to the level of satisfaction of principals from the three provinces as a result of their leadership being translated into the new school organization, which is being implemented within their schools to cope with the requirements of the new curriculum. Maputo City principals were relatively less optimistic than those from the other two provinces. The third case concerned principals' level of satisfaction with their leadership, which is expressed in teachers' diligent efforts to observe the interdisciplinarity principle in the lesson plans they make in compliance with the new curriculum. Here too, the principals from Maputo City seemed relatively less optimistic about their leadership role than those from the other two provinces.

5.3 RESULTS OF THE QUANTITATIVE ANALYSIS OF TEACHERS' QUESTIONNAIRES

5.3.1 Teachers who participated in the study

Two hundred and twenty-one teachers (136 male and 85 female) from the provinces of Niassa, Sofala and MaputoCity (see Table 5.11).

Table 5.11: Provincial distribution of teachers who participated in the study

		Province			Total
		Niassa	Sofala	Maputo City	
Gender	Male	40	55	41	136
	Female	31	20	34	85
Total		71	75	75	221

5.3.2 Academic qualifications of teachers who participated in the study

5.3.2.1 Comparison of academic qualifications within and between provinces

The academic qualifications of teachers from the three provinces who participated in the study vary significantly ($p = 0.013, p \leq 0.05$) within each province and from province to province (see tables 5.12 and 5.13). Out of 221 of teachers engaged in this research 35 (15.8%) had a primary education, 56 (25.3%) junior secondary education, 119 (53.8%) had a senior secondary qualification and 11 (5.0%) a tertiary qualification (*cf.* table 5.12).

Fourteen (40%) out of 35 teachers, who took part in the investigation and had a primary education were from Sofala. The case of Maputo City was also very impressive. Nine (81.8%) out of 11 teachers, who had a tertiary education were from that province, in addition, 46 (61.3%) of 119 participants who had a senior secondary education were also from Maputo City as were 11 (31.4%) who had a primary education. In spite of this obvious contrast, teachers Maputo City had better academic qualifications overall than teachers from the other two provinces. In fact, out of 221 teachers who took part in the study, the overall picture of academic qualifications looks as follows:

- Holders of a primary qualification: 10 (4.5%) were from Niassa, 14 (6.3%) from Sofala and 11 (5.0%) from Maputo City.
- Holders of a junior secondary qualification: 23 (10.4%) were from Niassa, 24 (10.9%) from Sofala and 9 (4.1%) from Maputo City.
- Holders of a senior secondary qualification: 38 (17.2%) were from Niassa, 35 (15.8%) from Sofala and 46 (20,8%) from Maputo City.
- Holders of a tertiary qualification: none from Niassa (0.0%), 2 (0.9%) from Sofala and 11 (4.1%) from Maputo City.

It is worth mentioning that the majority overall of teachers from the three provinces had a senior secondary education (see Table 5.12 *cf.* 5.12 a).

Table 5.12: Comparison of academic qualifications of teachers from the three participating provinces

			Academic Qualifications				Total
			Primary Education Qualific.	Junior Secondary Education Qualific.	Senior Secondary Education Qualific.	Higher Education Qualific.	
Province	Niassa	Number	10	23	38	0	71
		% within province	14,1%	32,4%	53,5%	0,0%	100%
	Sofala	Count	14	24	35	2	75
		% within province	18,7%	32,0%	46,7%	2,7%	100%
	Maputo City	Count	11	9	46	9	75
		% within province	14,7%	12,0%	61,3%	12,0%	100%
Total		Count	35	56	119	11	221
		% within province	15,8%	25,3%	53,8%	5,0%	100%

Table 5.12a: Comparison of academic qualifications of teachers from the three participating provinces (after merging cells together with an expected frequency below 5)

			Academic Qualifications			Total
			Primary Education Qualific.	Junior Secondary Education Qualific.	Senior Secondary Education Qualific.	
Province	Niassa	Number	10	23	38	71
		% within province	14,1%	32,4%	53,5%	100,0%
	Sofala	Count	14	24	37	75
		% within province	18,7%	32,0%	49,3%	100,0%
	Maputo City	Count	11	9	55	75
		% within province	14,7%	12,0%	73,3%	100,0%
Total		Count	35	56	130	221
		% within province	15,8%	25,3%	58,8%	100,0%

Table 5.13: Chi-square tests on comparison of academic qualifications of teachers from the three participating provinces

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21,826(a)	6	0,001
Likelihood Ratio	24,459	6	0,000
Linear-by-Linear Association	5,458	1	0,019
N of Valid Cases	221		

(a) 3 cells (25,0%) have expected count below 5.
The minimum expected count is 3,53.

Table 5.13a: Chi-square tests on comparison of academic qualifications of teachers from the three participating provinces (after merging cells together with an expected frequency below 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,728(a)	4	0,013
Likelihood Ratio	13,668	4	0,008
Linear-by-Linear Association	2,476	1	0,116
N of Valid Cases	221		

a 0 cells (0,0%) have expected count below 5.
The minimum expected count is 11,24.

Since the cut-off value is for statistical significance below than 0.05, the Pearson chi-square value equal to 0.013 and the index for Likelihood ratio equal to 0.008 indicate that there is a statistically significant difference between academic qualifications of teachers from the three provinces.

5.3.2.2 Teachers' academic qualifications by gender

A total of 136 male teachers from the three provinces participated in the study. Out of these 17 (12.5%) had primary education qualifications, 39 (28.7%) had junior secondary education qualifications, 72 (52.9%) had senior secondary education qualifications and 8 (5.9%) had higher education qualifications.

A total of 85 female teachers from the three provinces took part in the study. Out of these 18 (21.2%) were in possession of a primary education qualification, 17 (20.0%) had junior secondary education qualifications, 47 (55.3%) had senior secondary education qualifications and 3 (3.5%) had higher education qualifications.

Comparing the academic qualifications by level and gender, a striking result was obtained: out of a total of 35 teachers holding primary education qualifications, 17 (48.6%) were males while 18 (51.4%) were females. Out of a total of 56 teachers holding junior secondary qualifications, 39 (69.6%) were males and 17 (30.4%) were females. Out of 119 teachers holding a senior secondary qualification 72 (60.5%) were male while 47 (39.5%) were female. Out a total of 11 teachers with tertiary qualifications, 8 (72.7%) were male and 3 (27.3%) were female (see table 5.14).

Given the proportions of males and females, (61.5% and 38.5% respectively), the differences in academic qualifications by gender are not significant. This result is supported by chi-square tests (*cf.* Table 5.15): Pearson chi-square and Likelihood ratio values are both 0.197, that is, above 0.05, which is the cut-off value for statistical significance.

Table 5.14: Comparison of participating teachers' academic qualifications by gender

			Academic Qualifications				Total
			Primary Education Qualif ic.	Junior Secondary Education Qualif ic.	Senior Secondary Education Qualif ic.	Higher Education Qualif ic.	
Gender	Male	Number	17	39	72	8	136
		% within gender	12,5%	28,7%	52,9%	5,9%	
	Female	Number	18	17	47	3	85
		% within gender	21,2%	20,0%	55,3%	3,5%	
Total		Number	35	56	119	11	221
			15,8%	25,3%	53,8%	5,0%	

Table 5.15: Chi-square tests on participating teachers' comparison of academic qualifications by gender

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4,676(a)	3	0,197
Likelihood Ratio	4,682	3	0,197
Linear-by-Linear Association	0,951	1	0,329
N of Valid Cases	221		

(a) 1 cell (12,5%) has expected count below 5. The minimum expected count is 4,23.

5.3.3 Professional qualifications of teachers from the three participating provinces

Out of 221 teachers from the three provinces who took part in the study, 17 (7.7%) held a CFPP Teaching Certificate, 41 (18.6%) a IMP Teaching Certificate, 101(45.7%) a IMAP Teaching Certificate, 2 (0.9%) a UEM-Teaching Certificate, 8 (3.6%) a Bachelors degree, 4 (1.8%) a “Licentiate” degree and 48 (21.7%) other qualifications. The pedagogical qualifications of teachers from the three provinces are compared in table 5.16 which shows considerable variety in their teaching qualifications although they teach the same level. Most of them (101 or 45.7%) had IMAP qualifications. Notably, too a significant number of teachers (48 or 21.7%) had “other” (i.e. unspecified) qualifications and out of 17, 9 (52.9%) teachers holding a CFPP qualification came from Niassa province which also contributed no “Licenciates” to the sample, while Maputo City produced no-one with a UEM certificate.

Careful comparison of the figures reflected in table 5.16 reveals that on the whole teachers' qualifications across the three participating provinces do not vary significantly. This finding is confirmed by Pearson chi-square and Likelihood ratio values of 0.127 and 0.101 respectively, which are greater than 0.05, statistical significance cut-off value (see table 5.17).

Table 5.16: Comparison of professional qualifications of teachers from the three participating provinces

			Pedagogical Qualifications					Total
			CFPP *	IMP**	IMAP***	UEM (Education Certificate)	Other Qualific.	
Province	Niassa	Number	9	11	29	3	19	71
		% within province	12,7%	15,5%	40,8%	4,2%	26,8%	100%
	Sofala	Number	2	12	41	3	17	75
		% within province	2,7%	16,0%	54,7%	4,0%	22,7%	100%
	Maputo City	Number	4	20	28	9	14	75
		% within province	5,3%	26,7%	37,3%	12,0%	18,7%	100%
Total		Number	15	43	98	15	50	221
		% within province	6,8%	19,5%	44,3%	6,8%	22,6%	100%

*Teacher training or education course with upper primary education as admission requirement after National Independence in 1975. Before the National Education System (SNE) created in 1983, upper primary ended at Grade 6, which then became grade 7. Initially the CFPP course was exclusively professional, including Portuguese (because it was the medium of instruction in schools), didactics, educational psychology and pedagogical practice for primary schools as subjects, taught over six months, later extended to a year with a view to improved professional competence. The course then was upgraded to extend over three years during which the focus was not only teaching skills according to SNE requirements, but also on development to an extent that placed at on the same level as a junior secondary education (first cycle of secondary education). It is important to note that the CFPP course was always professionally geared for lower primary education (grade 1 to grade 5).

** Teacher training course to prepare teachers for upper primary level (Grades 5 and 6) before SNE, changed since to grades 6 and 7. The entrance level was a junior secondary education. Similarly, the IMP course offered professional as well as academic content to the extent that it received recognition as equivalent to a senior education qualification.

*** Teacher training course offered to prepare teachers for lower as well as upper primary education (grades 1 to 7). Admission requirement I is a junior secondary education. Initial duration of programme was two years, reduced to one year from 2006.

Note: additional information on educational requirements set for teachers is given in subsection 6.3.2.

Table 5.17: Chi-square tests on comparison teaching qualifications of Teachers from the three participating provinces

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17,208(a)	8	0,028
Likelihood Ratio	16,537	8	0,035
Linear-by-Linear Association	0,442	1	0,506
N of Valid Cases	221		

(a) 2 cells (13,3%) have expected count less than 5. The minimum expected count is 4,82.

5.3.4 Teachers' practical experience of upper primary level (EP2) teaching in the three participating provinces

The majority of surveyed teachers have been working at the upper primary level for five years or less. Indeed, out of 221 teachers from the three participating provinces, 125 (56.6%) had between one and five years of teaching experience at upper primary level; 61 (27.6%) have been working for 6 to 10 years; 22 (10.0%) for eleven to fifteen years; and only 13 (5.9%) for sixteen years and more (see Table 5.18 *cf.* 5.18a).

In all provinces, we found that there is a significant difference in teaching experience at EP2 among surveyed teachers. Table 5.19a supports this finding, giving Pearson chi-square and Likelihood Ratio values of 0.000, which is below 0.05, the cut-off value for the statistical significance. Interesting results are also apparent from Table 5.18. For instance, out of 13 surveyed teachers from the three provinces who had 16 years and more of teaching experience at upper primary level, 12 (92.3%) were based in Maputo City. Meanwhile, 54 (72.0%) out of 75 teachers with five years' experience or less were based in Sofala.

Thus, in spite of significant differences across provinces in years of experience, the various groups are relatively balanced in Maputo City (see Table 5.18). A comparison by gender of teachers' experience at the upper primary level (EP2) shows negligible differences i.e. 55.9% and 57.6% for male and female teachers with five years' experience or less, 29.4% and 24.7% respectively for males and females working teaching for six and ten years; 8.1% and 12.9% respectively for males and female teaching for 11 to 15 years; and 6.6% and 4.7% respectively for males and females working 16 years and more. This low variance is corroborated by Pearson chi-square

and Likelihood Ratio values of 0.570 and 0.574 respectively, which are greater than 0.05, the cut-off significance value for chi-square tests (see Table 5.21).

Table 5.18: Comparison of teachers' practical experience of upper primary level (EP2) teaching in the three participating provinces

			Number of years Teaching EP2				Total
			1-5 years	6-10 years	11-15 years	16 years and more	
province	Niassa	Number	42	25	3	1	71
		% within province	59,2%	35,2%	4,2%	1,4%	100%
	Sofala	Number	54	16	5	0	75
		% within province	72,0%	21,3%	6,7%	0,0%	100%
	Maputo City	Number	29	20	14	12	75
		% within province	38,7%	26,7%	18,7%	16,0%	100%
Total		Number	125	61	22	13	221
		% within province	56,6%	27,6%	10,0%	5,9%	100%

Table 5.18a: Comparison of teachers' practical experience of upper primary level (EP2) teaching in the three participating provinces (after merging cells together with an expected frequency below 5)

			Number of years teaching EP2			Total
			1-5 years	6-10 years	11-15 years	
Province	Niassa	Number	42	25	4	71
		% within province	59,2%	35,2%	5,6%	100,0%
	Sofala	Number	54	16	5	75
		% within province	72,0%	21,3%	6,7%	100,0%
	Maputo City	Number	29	20	26	75
		% within province	38,7%	26,7%	34,7%	100,0%
Total		Number	125	61	35	221
		% within province	56,6%	27,6%	15,8%	100,0%

Table 5.19: Chi-Square Tests on Comparison of Teachers' experience of upper primary level (EP2) teaching in the three participating provinces

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	38,825(a)	6	0,000
Likelihood Ratio	39,932	6	0,000
Linear-by-Linear Association	19,668	1	0,000
N of Valid Cases	221		

a. 3 cells (25,0%) have expected count less than 5. The minimum expected count is 4,18.

Table 5.19a: Chi-Square Tests on Comparison of Teachers' experience of upper primary level (EP2) teaching in the three participating provinces (after merging cells together with an expected frequency below 5)

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35,512(a)	4	0,000
Likelihood Ratio	34,141	4	0,000
Linear-by-Linear Association	16,398	1	0,000
N of Valid Cases	221		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 11,24.

Table 5.20: Comparison by Gender of Teachers' experience of upper primary level (EP2) teaching in the three participating provinces

			Number of Years Teaching EP2				Total
Gender	Male	Number	76	40	11	9	136
		% within gender	55,9%	29,4%	8,1%	6,6%	100,0%
	Female	Number	49	21	11	4	85
		% within gender	57,6%	24,7%	12,9%	4,7%	100,0%
Total		Number	125	61	22	13	221
		% within gender	56,6%	27,6%	10,0%	5,9%	100,0%

Table 5.21: Chi-Square Tests on Comparison by Gender of Teachers' experience of upper primary level (EP2) teaching in the three participating provinces

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,011(a)	3	0,570
Likelihood Ratio	1,993	3	0,574
Linear-by-Linear Association	0,004	1	0,952
N of Valid Cases	221		

a 0 cells (,0%) have expected count less than 5. The minimum expected count is 5,00.

5.3.5 The attitudes and beliefs of participating teachers

The attitudes and beliefs of the teachers who participated in the investigation are presented in table 5.22. As noted in the introduction to this chapter, the attitudes and beliefs of respondents from the three provinces were examined on the basis of twenty disaggregated variables, from which resulted an equal number of correspondent cross-tables incorporated in the appendix. Table 5.22 provides an overview of the results obtained from the individualized cross-tables. It is important

to note that the respondents in the neutral category were undecided. Therefore, in analysing the results of the study, the respondents opting for neutrality were considered to be expressing negative sentiment, while the fact that respondents who opted for the strongly disagree, disagree and neutral categories were lower than 20% overall is regarded as expressing positive sentiment (see Table 5.22).

Table 5.22: Summary of attitudes of participating teachers towards implementation of the new curriculum

Variables	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
V24. I feel like I belong at this school.	7 (3.2%)	5 (2.3%)	28 (12.7%)	66 (29.9%)	115 (52.0%)
V25. I feel that the school organization is changing and enabling successful implementation of the new curriculum.	12 (5.4%)	17 (7.7%)	36 (16.3%)	81 (36.7%)	75 (33.9%)
V26. I feel that teaching the new curriculum is fun at this school.	18 (8.1%)	28 (12.7%)	29 (13.1%)	64 (29.0%)	8 (3.7%)
V27. I feel acknowledged for good work in the context of the new curriculum.	14 (6.3%)	19 (8.6%)	36 (16.3%)	67 (30.3%)	85 (38.5%)
V28. I feel intrinsically rewarded for doing my job well in the context of the new curriculum.	37 (16.7%)	32 (14.5%)	31 (14.0%)	61 (27.6%)	60 (27.1%)
V29. I work with colleagues who treat me with respect.	5 (2.3%)	2 (.9%)	19 (8.6%)	66 (29.9%)	129 (58.4%)
V30. I work with colleagues who listen if I have ideas about doing things better in the context of the new curriculum.	4 (1.8%)	10 (4.5%)	26 (11.6%)	78 (35.3%)	103 (46.6%)
V31. My principal/ principal assistants/ learning cycle leader/ learning area coordinator is an effective instructional leader.	8 (3.6%)	7 (3.2%)	40 (18.1%)	79 (35.7%)	87 (39.4%)
V32. My principal/ principal assistants/ learning cycle leader/ learning area coordinator facilitates communication effectively.	1 (0.5%)	9 (4.1%)	34 (15.4%)	80 (36.2%)	97 (43.9%)
V33. My principal/ principal assistants/ learning cycle leader/ learning area coordinator supports me in my work with students under the new curriculum.	2 (0.9%)	9 (4.1%)	46 (20.8%)	72 (32.6%)	92 (41.6%)
V34. My principal/ principal assistants/ learning cycle leader/ learning area coordinator supports shared decision making.	5 (2.3%)	8 (3.6%)	51 (23.1%)	82 (37.1%)	75 (33.9%)
V35. My principal/ principal assistants/ learning cycle leader/ learning area coordinator allows me to be an effective instructional leader.	4 (1.8%)	8 (3.6%)	48 (21.7%)	73 (33.0%)	88 (39.8%)
V36. My principal/ principal assistants/ learning cycle leader/ learning area coordinator is effective in helping us to realize the vision on which the new curriculum is predicated.	5 (2.3%)	12 (5.4%)	48 (21.7%)	78 (35.3%)	78 (35.3%)
V37. I realize that the new curriculum has clear learning objectives, and that it emphasizes the acquisition of basic skills.	14 (6.3%)	13 (5.9%)	37 (16.7%)	75 (33.9%)	82 (37.1%)
V38. I realize that effective professional development is helpful in fulfilment of curriculum goals.	8 (3.6%)	14 (6.3%)	50 (22.6%)	82 (37.1%)	67 (30.3%)
V39. I realize that student achievement can increase through active learning methods.	9 (4.1%)	13 (5.9%)	38 (17.2%)	85 (38.5%)	76 (34.4%)
V40. I realize that student achievement data are an important tool for improvement of student learning.	11 (5.0%)	13 (5.9%)	43 (19.5%)	86 (38.9%)	68 (30.8%)

V41. I realize that effective parent involvement and other stakeholders is needed for successful implementation of the new curriculum.	4 (1.8%)	5 (2.3%)	33 (14.9%)	51 (23.1%)	128 (57.9%)
V42. I have the opportunity to develop my teaching skills individually and co-operating with other colleagues on the new curriculum.	6 (2.7%)	12 (5.4%)	27 (12.2%)	67 (30.3%)	109 (49.3%)
V43. I have the opportunity to grow professionally under the new curriculum dispensation	13 (5.9%)	6 (2.7%)	36 (16.3%)	56 (25.3%)	110 (49.8%)

Table 5.22 shows that the majority of participating teachers recorded positive sentiments regarding:

- School ownership (V24);
- Mutual respect among teachers (V29);
- Sharing innovative ideas (V30);
- Principals' facilitating effective communication (V32);
- Importance of involving parents and other stakeholders (V41)

In regard to the four variables (V24, V29, V32 and V41) above, there was no significant difference between teachers' opinions across the participating provinces. This finding was supported by chi-squares calculation, which is $p \geq 0.05$ (See Appendix E2 *cf.* Appendix E2a, tables on chi-squares; for V24, E2a.2, $p = 0.131$; for V29, E2a.12, $p = 0.107$; for V32, E2a.18, $p = 0.263$; for V41, E2a.36, $p = 0.051$). Significant difference with regard to V30 ($p = 0.000$, E2a.14) was the only exception.

Taking Appendix E2, table E2.37 into consideration, findings show that Maputo City had more teachers than Niassa and Sofala saying that implementation of the new curriculum had give them opportunities to develop individual teaching skills and cooperate with other colleagues. Appendix E2, table E2.11 indicates that Niassa had more teachers who expressed mutual respect than Sofala and Maputo City. Moreover, table 5.22 revealed a widespread negative feeling among respondents about many other research variables. These feelings were reflected in attitudes and beliefs towards implementation of the new curriculum. However, it was also noticeable that the level of negative feelings varied significantly across the three provinces. This finding is underpinned by chi-squares through the Pearson chi-square values, which are less than 0.05, implying significant difference among variables. Except three variables, which drew equally negative ratings, there was no

significant difference of opinions across the three provinces about implementing the new curriculum. These variables were:

- Shared decision-making (V34, see Appendix E2a, table E2a.22, $p = 0.395$);
- Principals' help to reach new vision (V36, see Appendix E2a, table E2a.26, $p = 0.196$);
- Professional growth (V43, see Appendix E2a, table E2a.40, $p = 0.515$).

5.4 RESULTS OF STUDENTS' QUESTIONNAIRES

5.4.1 Students who participated in the study

As shown in table 5.89, 384 students (211 male and 173 female) from Niassa province, 1 319 (778 male and 541) from Sofala, and 1 002 (480 male and 522 female) from Maputo City. Thus, 2 705 students participated in this research of which 1 469 were males and 1 236 were females. The students came from 38 schools: 11 in Niassa, 15 in Sofala and 12 in Maputo City. (See table 5.24)

Table 5.23: Provincial representation of students who participated in the study

		Province			Total
		Niassa	Sofala	Maputo City	
Gender	Male	211	778	480	1469
	Female	173	541	522	1236
Total		384	1319	1002	2705

Table 5.24: Schools and number of students involved in the study by province

		Province			Total
		Niassa	Sofala	Maputo City	
Schools	EPC UNIDADE 2			48	48
	EPC UNIDADE 6			123	123
	EPC 25 de JUNHO			132	132
	EPC 3 de FEVEREIRO			75	75
	EPC HEROIS				
	MOCAMBICANOS--BAGA MOYO			50	50
	EPC 25 de SETEMBRO			77	77
	EPC BAIRRO do JARDIM			118	118
	EPC da MUNHUANA			110	110
	EPC LURDES MUTOLA			42	42
	EPC A LUTA CONTINUA			96	96
	EPC 16 de JUNHO			106	106
	EP INHACA			25	25
	EPC MACURUNGO		199		199
	EPC 12 de OUTUBRO--BEIRA		171		171
	EPC MUNHAVA		92		92
	EPC 25 de SETEMBRO--BEIRA		78		78
	EPC AGOSTINHO NETO		93		93
	EPC INHAMIZUA		67		67
	EPC 11 de NOVEMBRO		50		50
	EPC GUARA-GUARA 2		99		99
	EP2 SEDE-BUZI		95		95
	EPC AMILCAR CABRAL		43		43
	EPC SENA-CAIA		54		54
	EPC HEROIS MOCAMBICANOS		49		49
	EP2 MAROCANE--BEIRA		98		98
	EPC TICA		73		73
	EPC JOSSIAS				
	TONGOGARA		58		58
	EPC Ngame	15			15
	EPC de Naossa	15			15
	EPC de Malica	19			19
	EP2 Eduardo Mondlane	38			38
	EP2 Novos Horizontes	101			101
	EPC de Namacula	27			27
	EPC A Luta Continua--Lichinga	50			50
	EPC Nzinji	25			25
	EPC Ngongoti	25			25
	EPC de Nsauca	44			44
	EPC Nhansenhenje	25			25
Total of students		384	1319	1002	2705

5.4.2 Perceptions, beliefs and attitudes of learners regarding the new curriculum

The perceptions, beliefs and attitudes of learners regarding the new curriculum are summarized in Table 5.25. The respondents in the neutral category were undecided. Analysis of the results of the study shows that neutrality expressed negativity while the fact that the collective response in the strongly disagree, disagree and neutral categories amounted to less than, or equal to 20%, expressed positive sentiment. As noted in the introduction to this chapter, the perceptions, beliefs and attitudes of learners across the three provinces were ascertained through seventy-five disaggregated variables, from which resulted an equal number of corresponding crosstables that are incorporated with the appendix. An overview of results from those individualized crosstables is contained in Table 5.25.

Table 5.25: Summary of perceptions, beliefs and attitudes of participating learners regarding the new curriculum

Variables	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
V118: Beyond my textbooks I don't read other books.	1176 (43.5%)	415 (15.3%)	508 (18.8%)	280 (10.4%)	326 (12.1%)
V107: My preferable textbook is Local Language textbook.	192 (7.1%)	177 (6.5%)	1148 (42.4%)	524 (19.4%)	664 (24.5%)
V96: I think that the important subject is Local language.	204 (7.5%)	158 (5.8%)	1074 (39.7%)	515 (19.0%)	754 (27.9%)
V86: In the teaching of the new curriculum, time is spent in whole-class discussions with the teacher.	457 (16.9%)	381 (14.1%)	512 (18.9%)	688 (25.4%)	667 (24.7%)
V85: In the teaching of the new curriculum, time is spent listening to the teacher talk.	561 (20.7%)	375 (13.9%)	393 (14.5%)	594 (22.0%)	782 (28.9%)
V68: Students at this school respect other students who are different from them.	382 (14.1%)	349 (12.9%)	526 (19.4%)	749 (27.7%)	699 (25.8%)
V53: Other students at this school treat me with respect.	333 (12.3%)	373 (13.8%)	489 (18.1%)	789 (29.2%)	721 (26.7%)
V76: My teachers care about me.	222 (8.2%)	272 (10.1%)	593 (21.9%)	835 (30.9%)	783 (28.9%)
V55: The work at this school is challenging.	295 (10.9%)	283 (10.5%)	491 (18.2%)	776 (28.7%)	860 (31.8%)
V90: In the teaching of the new curriculum, time is spent analyzing individual or class performance.	285 (10.5%)	309 (11.4%)	465 (17.2%)	872 (32.2%)	774 (28.6%)
V113: My preferred textbook is Crafts/Arts textbook.	172 (6.4%)	187 (6.9%)	656 (24.3%)	869 (32.1%)	821 (30.4%)
V88: In the teaching of the new curriculum, time is spent reading.	339 (12.5%)	306 (11.3%)	344 (12.7%)	729 (27.0%)	987 (36.5%)
V52: I am treated with respect by the office staff.	249 (9.2%)	287 (10.6%)	428 (15.8%)	840 (31.1%)	901 (33.3%)
V46: I feel challenged at this school	285 (10.5%)	300 (11.1%)	371 (13.7%)	723 (26.7%)	1 026 (37.9%)
V71: My teachers understand when students have personal problems.	240 (8.9%)	223 (8.2%)	470 (17.4%)	850 (31.4%)	922 (34.1%)



V91: I work well under the new curriculum when I am working in projects or research.	235 (8.7%)	216 (8.0%)	481 (17.8%)	928 (34.3%)	845 (31.2%)
V102: I think that the important subject is Crafts/Arts.	162 (6.0%)	191 (7.1%)	564 (20.9%)	953 (35.2%)	835 (30.8%)
V73: My teachers have confidence in me.	184 (6.8%)	232 (8.6%)	500 (18.5%)	952 (35.2%)	837 (30.9%)
V74: My teachers know me well.	184 (6.8%)	216 (8.0%)	506 (18.7%)	850 (31.4%)	949 (35.1%)
V114: My preferred textbook is Visual/ Aesthetic Education Textbook.	125 (4.6%)	175 (6.5%)	552 (20.4%)	928 (34.3%)	925 (34.2%)
V75: My teachers listen to my ideas.	173 (6.4%)	229 (8.5%)	442 (16.3%)	922 (34.1%)	939 (34.7%)
V87: In the teaching of the new curriculum, time is spent working in small groups.	269 (9.9%)	218 (8.1%)	332 (12.3%)	868 (32.1%)	1 018 (37.6%)
V115: My preferred textbook is Music Education textbook.	114 (4.2%)	159 (5.9%)	532 (19.7%)	869 (32.1%)	1 031 (38.1%)
V104: I think that the important subject is Music Education.	119 (4.4%)	151 (5.6%)	527 (19.5%)	916 (33.9%)	992 (36.7%)
V92: I work well under the new curriculum when the teachers are leading discussions with the whole class.	182 (6.7%)	214 (7.9%)	388 (14.3%)	996 (36.8%)	925 (34.2%)
V79: My teachers give me individual attention when I need it.	225 (8.3%)	233 (8.6%)	318 (11.8%)	1 027 (38.0%)	902 (33.3%)
V93: I work well under the new curriculum when I am working in a small group.	153 (5.7%)	212 (7.8%)	410 (15.2%)	962 (35.6%)	968 (35.8%)
V89: In teaching the new curriculum, time is spent answering questions from a book or worksheet.	258 (9.5%)	258 (9.5%)	255 (9.4%)	786 (29.1%)	1 148 (42.4%)
V94: I work well under the new curriculum when I am working by myself.	220 (8.1%)	208 (7.7%)	333 (12.3%)	819 (30.3%)	1 125 (41.6%)
V84: The new curriculum will contribute to my education in reference to my ability to cope with technology.	150 (5.5%)	159 (5.9%)	443 (16.4%)	811 (30.0%)	1 142 (42.2%)
V59: Schooling is fun here.	209 (7.7%)	204 (7.5%)	336 (12.4%)	838 (31.0%)	1 118 (41.3%)
V54: The people responsible for what I learn are my teachers.	230 (8.5%)	217 (8.0%)	273 (10.1%)	703 (26.0%)	1 282 (47.4%)
V103: I think that the important subject is Visual/ Aesthetic Education.	113 (4.2%)	181 (6.7%)	532 (19.7%)	943 (34.8%)	936 (34.6%)
V44: I feel safe at this school.	239 (8.8%)	234 (8.7%)	243 (9.0%)	739 (27.3%)	1 250 (46.2%)
V49: I assess my own work.	225 (8.3%)	199 (7.4%)	283 (10.5%)	836 (30.9%)	1 162 (43.0%)
V58: I am personally responsible for what I learn.	204 (7.5%)	244 (9.0%)	255 (9.4%)	765 (28.3%)	1 237 (45.7%)
V65: Students at this school have opportunities to learn from each other.	179 (6.6%)	207 (7.7%)	306 (11.3%)	972 (35.9%)	1 041 (38.5%)
V109: My preferred textbook is Social Sciences textbook	85 (3.1%)	154 (5.7%)	454 (16.8%)	955 (35.3%)	1 057 (39.1%)
V77: My teachers make learning fun.	133 (4.9%)	155 (5.7%)	392 (14.5%)	956 (35.3%)	1 069 (39.5%)
V50: Teachers treat me with respect.	154 (5.7%)	176 (6.5%)	334 (12.3%)	805 (29.8%)	1 236 (45.7%)
V98: I think that the important subject is Social Sciences .	80 (3.0%)	127 (4.7%)	420 (15.5%)	985 (36.4%)	1 093 (40.4%)
V97: I think that the important subject is English.	91 (3.4%)	143 (5.3%)	384 (14.2%)	898 (33.2%)	1 189 (44.0%)
V57: I feel successful at school.	99 (3.7%)	147 (5.4%)	370 (13.7%)	1 081 (40.0%)	1 008 (37.3%)
V108: My preferred textbook is English textbook.	87 (3.2%)	132 (4.9%)	387 (14.3%)	867 (32.1%)	1 232 (45.5%)
V105: I think that the important subject is Physical Education.	80 (3.0%)	110 (4.1%)	405 (15.0%)	8 15 (30.1%)	1 295 (47.8%)
V116: My preferred textbook is Physical Education textbook	88 (3.3%)	115 (4.3%)	394 (14.6%)	798 (29.5%)	1 310 (48.4%)
V110: My preferred textbook is Moral and Civic Education textbook.	69 (2.6%)	112 (4.1%)	413 (15.3%)	861 (31.8%)	1 250 (46.2%)
V45: I feel like I belong at this school.	132 (4.9%)	165 (6.1%)	288 (10.6%)	943 (34.9%)	1 177 (43.5%)
V67: Participating in extracurricular activities is important to me.	114 (4.2%)	118 (4.4%)	350 (12.9%)	985 (36.4%)	1 137 (42.0%)
V72: My teachers help me gain confidence in my ability to learn.	109 (4.0%)	144 (5.3%)	325 (12.0%)	977 (36.1%)	1 150 (42.5%)



V51: School administrators treat me with respect.	116 (4.3%)	167 (6.2%)	267 (9.9%)	847 (31.3%)	1 308 (48.4%)
V64: I am doing my best at school.	88 (3.3%)	136 (5.0%)	319 (11.8%)	898 (33.2%)	1 264 (46.7%)
V70 My teachers expect me to do my best.	121 (4.5%)	114 (4.2%)	311 (11.5%)	878 (32.5%)	1 281 (47.4%)
V99: I think that the important subject is Moral and Civic Education.	76 (2.8%)	102 (3.8%)	363 (13.4%)	884 (32.7%)	1 280 (47.3%)
V61: I think this is a good school.	105 (3.9%)	134 (5.0%)	266 (9.8%)	1 020 (37.7%)	1 180 (43.6%)
V48: Teachers encourage me to assess the quality of my own work.	127 (4.7%)	158 (5.8%)	220 (8.1%)	846 (31.3%)	1 354 (50.1%)
V66: Students at this school have opportunities to learn about each other.	114 (4.2%)	130 (4.8%)	244 (9.0%)	947 (35.0%)	1 270 (47.0%)
V63: Doing well in school makes me feel good about myself.	91 (3.4%)	110 (4.1%)	276 (10.2%)	990 (36.6%)	1 238 (45.8%)
V69: My teachers expect students to do their best.	99 (3.7%)	104 (3.8%)	291 (10.8%)	912 (33.7%)	1 299 (48.0%)
V83: The new curriculum will contribute to my education in reference to my ability to present information.	78 (2.9%)	99 (3.7%)	317 (11.7%)	992 (36.7%)	1 219 (45.1%)
V47: I understand how to apply what I learn to real life/ situations.	82 (3.0%)	90 (3.3%)	273 (10.1%)	972 (35.9%)	1 288 (47.6%)
V112: My preferred textbook is Natural Sciences textbook.	46 (1.7%)	61 (2.3%)	296 (10.9%)	852 (31.5%)	1 450 (53.6%)
V78: My teachers are excited about the subjects they teach.	72 (2.7%)	70 (2.6%)	228 (8.4%)	831 (30.7%)	1504 (55.6%)
V60: I like this school.	107 (4.0%)	88 (3.3%)	173 (6.4%)	827 (30.6%)	1 510 (55.8%)
V101: I think that the important subject is Natural Sciences.	46 (1.7%)	64 (2.4%)	234 (8.7%)	868 (32.1%)	1 493 (55.2%)
V82: The new curriculum will contribute to my education in reference to my ability with Mathematics.	63 (2.3%)	58 (2.1%)	207 (7.7%)	909 (33.6%)	1 468 (54.3%)
V111: My preferred textbook is Mathematics textbook.	57 (2.1%)	55 (2.0%)	191 (7.1%)	599 (22.1%)	1 803 (66.6%)
V80: The new curriculum will contribute to my education in reference to my ability to write.	53 (2.0%)	57 (2.1%)	145 (5.4%)	866 (32.0%)	1 584 (58.6%)
V117: Beyond my textbooks, I read other books.	66 (2.4%)	34 (1.3%)	130 (4.8%)	534 (19.7%)	1941 (71.7%)
V56: I find what I learn in school to be relevant to real life.	53 (2.0%)	56 (2.1%)	126 (4.7%)	703 (26.0%)	1 767 (65.3%)
V81: The new curriculum will contribute to my education in reference to my ability to read.	47 (1.7%)	51 (1.9%)	129 (4.8%)	793 (29.3%)	1 685 (62.3%)
V100: I think that the important subject is Mathematics.	42 (1.6%)	35 (1.3%)	128 (4.7%)	563 (20.8%)	1 937 (71.6%)
V106: My preferred textbook is Portuguese textbook.	49 (1.8%)	21 (.8%)	113 (4.2%)	490 (18.1%)	2 032 (75.1%)
V62: I like to learn.	35 (1.3%)	30 (1.1%)	86 (3.2%)	536 (19.8%)	2 018 (74.6%)
V95: I think that the important subject is Portuguese.	45 (1.7%)	24 (0.9%)	68 (2.5%)	535 (19.8%)	2 033 (75.1%)

Table 5.25 illustrates that the perceptions, beliefs and attitudes of learners regarding the new curriculum may basically be divided into two groups that are respectively negative and positive about the change in that aggregate responses to the categories of strongly disagree, disagree and neutral is deemed negative if it is equal to or above 20%, if the rating does not exceed 20%. There were significant differences on both the positive and the negative side. These observations were corroborated by

chi-square tests through Pearson chi-square and Likelihood ratio values below the statistical significance cut-off value of 0.05 for chi-square tests (see appendix F2).

However, there was no significant difference in students' opinions about the following items:

- School learning relevancy to real life situations (V56, see Appendix F2, Table F2.30, $p = 0.068$);
- Level of importance of Portuguese, which they are taught in the context of the new curriculum (V95, Appendix F2, Table F2.124, $p = 0.128$);
- Level of importance of Mathematics, which they are taught in the context of the new curriculum (V100, Appendix F2, Table F2.138, $p = 0.278$);
- Teachers' attitude towards individual student's learning at school (V70, Appendix F2, Table F2.60, $p = 0.054$);
- Safety in schools by gender (V44, Appendix F2, Table F2.4, $p = 0.084$);
- Learning towards real world relevance under the new curriculum: regarding skills, by gender (V81, Appendix F2, Table F2.86, $p = 0.055$);

As can be seen, chi-square tests values are equal to or above the statistical significance limit of 0.05 ($p \geq 0.05$).

B. RESULTS OF THE PRINCIPAL COMPONENT FACTOR ANALYSIS

5.5 INTRODUCTION

As explained earlier, this study deals mainly with educators' and learners' opinions on curriculum implementation in Mozambican schools, to which end a comprehensive questionnaire was designed and divided into four sections to cover the following components as described in chapter 4, from paragraph one onwards:

- Nine variables in Section A covered respondents' bibliographical information (i.e. principals (head teachers), teachers and learners).
- Section B dealt with variables 10 to 23, addressing principals' opinions of school leadership (i.e. its impact).

- Section C included variables 24 to 43, exploring teachers' beliefs, attitudes, ability, confidence and capacity-building initiatives in connection with the new curriculum.
- Section D dealt with variables 44 to 118 exploring learners' beliefs and attitudes about school and learning under the new curriculum.

Given the above theoretical foundations (*cf.* Chapter 4 on Methodology), the results of factor analysis are presented in sections 5.5 and 5.6. Analysis is split into first-order investigative factor analysis and second-order confirmative factor analysis. The former identified the related variables that can be clustered to form a single variable or factor sufficient evidence was gathered to form a hypothesis about the number of factors inherent in the data. A second-order confirmative factor analysis to assess the validity and reliability of factors gleaned from the first-order investigative factor analysis. (See section 4.5.2 of this thesis) was conducted.

5.6 RESULTS OF THE FIRST-ORDER INVESTIGATIVE FACTOR ANALYSIS

5.6.1 Factors underlying principals' responses (variables 10-23)

Analysis of participating principals' responses to the questionnaire produced four factors with eigenvalues greater than one. Cumulatively these factors account for 60.714% of total explained variance which is made up of the eigenvalues calculated as 4.722, 1.442, 1.251 and 1.084 (*cf.* Table 5.26). Regarding the use of explained variance as criterion, Garson (2006:11) observes that:

Some researchers simply use the rule of keeping enough factors to account for 90% (sometimes 80%) of the variation. Where the researcher's goal emphasizes parsimony (explaining variance with as few factors as possible), the criterion could be as low as 50%.

Therefore, 60.71% total explained variance can be seen as remarkably high, because it is imperative to determine "... how many factors have appreciable influence and have loadings that can be reliably estimated" (Cliff 1987:358).

Figure 5.1 is shows the Cattell's scree test applied to principals' responses. It is important to note that:

- The plot decreases from left to right. In terms of eigenvalues, there is a large difference between the first and second components. The first eigenvalue corresponding to the first component is three times or more the size of the eigenvalue of the second component.
- It can be seen that the curve begins to flatten between factors 4 and 5.
- Only four factors should be retained since the eigenvalue of factor 5 is less than 1.

In the present case concerning principals' responses (see Table 5.27), through the first order factor analysis, the following factors were identified as the main underlying attitudes:

- Factor 1: School restructuring and reculturing
- Factor 2: Mutual support and professional development
- Factor 3: Innovative teaching initiatives
- Factor 4: Leadership

The factor analysis clustered the opinions of respondents into four factors. These factors captured all items (responses) that show a high internal consistency, meaning that a single commonality was shared within a given factor. It is important to note that, according to Green and Salkind (2005:317) "the percent of variance of the variables accounted for by the factor is equal to the eigenvalue divided by the total amount of variance of the variables times 100". For instance, the eigenvalue associated with the first factor is 4.722 and the percent of total variance accounted for by the first factor is $(4.722:14) \times 100 = 33.731$. Let us take two more examples (e.g. concerning factors 4 and 14), in order to make explicit the rule of the percent of variance of the variables accounted for by the factor. The eigenvalue linked with the fourth factor is 1.084 and the per cent of total variance accounted for by the fifth factor is $(1.084:14) \times 100 = 7.746$. The eigenvalue connected with the fourteenth factor is 0.191 and the percent of total variance accounted for by the fourteenth factor is $(0.191:14) \times 100 = 1.364$. In section 4.5.2 of this thesis, it was highlighted that eigenvalues are helpful in deciding how many factors should be used in the study.

According to Field (2000:437), "to discover what common variance really exists between variables we must decide which factors are meaningful and discard any that

are too trivial to consider” One criterion is to retain all factors that have eigenvalues greater than one (Kaiser, 1960 and Cliff, 1987). As shown in table 5.26, they were only listed values to the first five factors, 63.64% of the total explained variance (common variance between variables or present in the data). Field (2000:436) notes in this regard “[...] eigenvalues associated with a variate indicate the substantive importance of the factor. Therefore, it seems logical that we should retain only factors with large eigenvalues”. Another important remark related to the clustered opinions of respondents into factors is made by Thompson (2004:97) as follows: “[...] all real factors involve multiple variables, and to this extent must be named in a manner reflecting the overall pattern of contributions of different variables to the factor’s definition”. Table 5.27 summarizes the exercise of identifying the four factors obtained as a result of the first-order factor analysis of participating principals’ responses to the questionnaire. In fact it is a challenging exercise to determine a common name that reflects the multiple variables encompassed by the factor. Moreover, as Field (2000) points out, in an ideal world a variable should have a high factor loading to only one factor, namely a large co-ordinate for one of the axes, and low coordinates for any other factor. However, it does not look like that in many real cases. According to Bryman and Cramer (1999) factor loading or correlation is the relationship between each item or variable with a factor, and many researchers consider all loadings in excess of 0.3 regardless of whether any variables are thereby implicated in more than one factor. Looking carefully at the Table 5.27, we see that the I.7.2.1; V19, I.7.2.5;V23, I.7.1.7;V16, I.7.2.3;V21 and I.7.1.6;V15 do not have a (relatively) high factor loading to only one factor. That is to say, according to Field (200:425), these variables measure different aspects of some common underlying dimension (see Table 5.27). Nevertheless, as can be seen from Table 5.27, each variable mentioned above is ‘particularly higher’ than only one factor that “specially belongs”. Anyway, it is important to remain aware that there are variables that measure different aspects of some common underlying dimension. In other words, some of the items representing other factors have high internal consistencies with other factors. Going back to the case of factors derived from principals’ responses (*cf.* Table 5.27), interesting issues may be raised. For instance, in the case of I.7.2.3; V21 (I am satisfied that sharing and cooperation on all issues enabling effective implementation of the new curriculum characterizes the school climate) we see that this item or variable simultaneously measures the efforts towards school restructuring

and reculturing, as well as mutual support towards innovative teaching initiatives. In view of the factor loading we also note that the variable relates particularly to the third factor – innovative teaching initiatives as that it loads most highly on the third factor, although its correlation with the first and second factors varies somewhat. Effectively, as emphasized earlier in this thesis, if effective change at school level towards successful teaching and learning is desired, then the school should embark on school restructuring and reculturing, which entails mutual support and professional development, to which end innovative teaching initiatives are required as a key characteristic of a new way of school organization and work (see section 1.6.5).

Table 5.26: Total variance explained by the principal-component factor analysis of Principals' responses

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,722	33,731	33,731	4,722	33,731	33,731
2	1,442	10,300	44,030	1,442	10,300	44,030
3	1,251	8,938	52,968	1,251	8,938	52,968
4	1,084	7,746	60,714	1,084	7,746	60,714
5	,940	6,713	67,427			
6	,866	6,188	73,615			
7	,750	5,361	78,976			
8	,628	4,486	83,462			
9	,574	4,101	87,563			
10	,477	3,404	90,967			
11	,432	3,088	94,055			
12	,368	2,630	96,685			
13	,273	1,951	98,636			
14	,191	1,364	100,000			

Figure 5.1: Cattell's scree test on principals' responses, showing the amount of variance explained in terms of eigenvalues

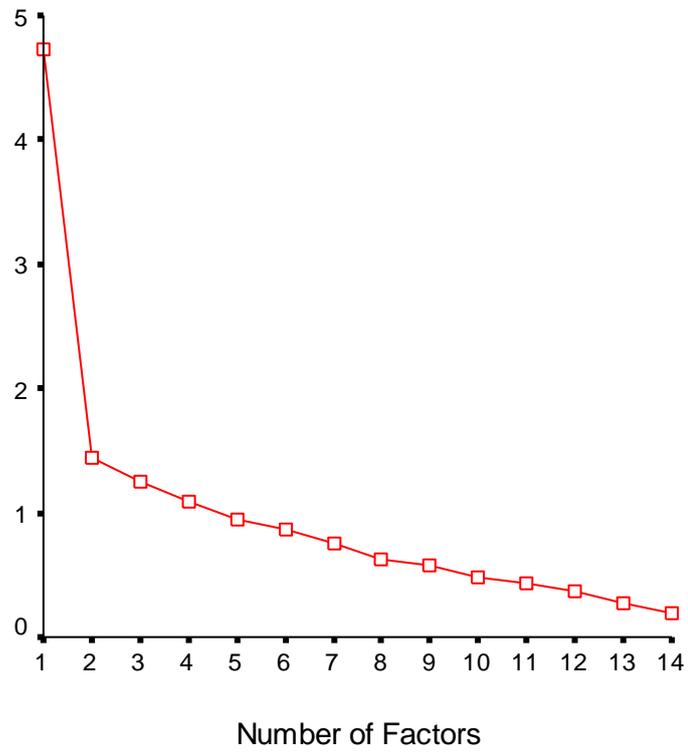


Table 5.27: Rotated factor pattern matrix of the four factors on principals' responses extracted during the first-order factor analysis

Items/ variables	Factors			
	School restructuring and reculturing	Mutual support and professional development	Innovative teaching initiatives	Leadership
I try to promote student achievement under the new curriculum, by maximizing the amount of school time used for learning under new curriculum. (I.7.1.9; V18)	.788	.203	.034	.213
I try to promote student achievement under the new curriculum, by challenging teachers and students continuously to fulfil curriculum goals. (I. 7.1.4; V13)	.776	-.130	-.021	.261
I am satisfied that a new school organization is being implemented to cope with the demand of new curriculum. (I.7.2.1; V19)	.753	.342	.225	-.054
I am satisfied that the school has already developed the local curriculum. (I.7.2.5; V23)	.596	.313	.278	-.026
I try to promote student achievement under the new curriculum, by cultivating close relationship with teachers, other staff members, students and parents. (I.7.1.1; V10)	.117	.739	-.028	.122
I try to promote student achievement under the new curriculum, putting in place an action plan produced collectively in school for effective implementation of the new curriculum. (I.7.1.2; V11)	.043	.705	.285	.387
I try to promote student achievement under the new curriculum, through effective professional development. (I.7.1.3; V12)	.285	.604	.071	.005
I try to promote student achievement under the new curriculum, by promoting collaboration among teachers so that they can develop new skills by sharing professional knowledge about the new curriculum. (I.7.1.7; V16)	.019	.448	.440	.000
I am satisfied that teachers are using a variety of active methods in their teaching as required by the new curriculum. (I.7.2.4; V22)	.220	.029	.834	.048
I am satisfied that teachers are diligent in their endeavour to observe interdisciplinarity in the lessons plans they make according to the new curriculum. (I.7.2.2; V20)	-.036	.101	.729	.078
I am satisfied that sharing and cooperation on all issues I am satisfied that the school climate is exemplified by sharing and cooperation that conduce to effective curriculum implementation. (I.7.2.3; V21)	.426	.322	.482	.211
I try to promote student achievement under the new curriculum, by coordinating and managing the learning process in the context of the new curriculum. (I.7.1.6; V15)	.286	-.001	.457	.380
I try to promote student achievement in the context of new curriculum, by holding regular and productive staff meetings. (I.7.1.5; V 14)	.086	.092	.086	.887
I try to promote student achievement under the new curriculum, by monitoring teachers' performance under the new curriculum. (I.7.1.8; V17)	.245	.414	.118	.579

5.6.2 Factors underlying teachers' responses (variables 24-43)

The first-order factor analysis of teachers' responses (variables 24-43) of the questionnaire produced five factors with eigenvalues greater than one. This number of factors was confirmed through Cattell's scree test. The curve begins to flatten between factors 5 and 6. Factor 6 has an eigenvalue below 1. So, only five factors should be retained (see Figure 5.2).

Together the five factors amount to 66.181% of the total variance and their eigenvalues were calculated as 7.815, 1.752, 1.452, 1.119 and 1.098 respectively (Table 5.277). The factors are as follows:

- Factor 1: Leadership
- Factor 2: Rewarding
- Factor 3: Effective teaching
- Factor 4: Capacity building
- Factor 5: Positive work environment

In Table 5.28, values were only listed for the first five factors, cumulatively amounting to 66.18% of the total variance explained (common variance between variables or present in the data). As noted in section 5.6.1, it should be considered that remark: "...eigenvalues associated with a variance indicate the substantive importance of the factor. Therefore, it seems logical that we should retain only factors with large eigenvalues" Field's (2000:436).

As Field (2000) notes further that ideally a variable should have a high factor loading to only one factor, that in a large coordinate for one of the axes, and low coordinates for any other factor. However, in many real cases a variable is associated with more than one factor. I also decided to follow the same criterion. Looking carefully at the table 5.29, we see that the I.8.3.6;V36, I.8.1.6;V28, I. 8.1.3;V25, I.8.4.5;V38, I. 8.4.4;V40, I.8.4.5;V41, I.8.1.2;V24 and I.8.2.2; V30 do not have a (relatively) high factor loading to only one factor. That is to say, according to Field (200:425), these variables measure different aspects of some common underlying dimension (see Table 5.29). Nevertheless, as can be seen from Table 5.29, each variable mentioned above is 'particularly higher' than only one factor that "specially" belongs. Bryman

and Cramer (1999:280) note that “in general the meaning of a factor is determined by the items which load most highly on it”. Anyway, it is important to borne in mind that there are variables that measure different aspects of some common underlying dimension. Going back to the case of factors derived from teachers’ responses (*cf.* Table 5.29), interesting issues may be raised. For instance, in the case of I.8.1.6; V28 (I feel intrinsically rewarded for doing my job well in the context of new curriculum) we see that it measures two factors: “leadership” and “rewarding”. Considering the factor loading, we have to conclude that the variable “specially” belongs to the second factor “rewarding”. Obviously, rewarding may be understood as one aspect of leadership. Brown, Oke and Brown (1982:9) observe that: “the life of a teacher is not an easy one but there are some long term intrinsic rewards even if the extrinsic rewards are fairly minimal”. For the long term “intrinsic rewards” calls for a dedicated and hardworking teacher whose efforts are rewarded by the satisfaction or compensation derived from the success of learners rather than salary (which cannot for that reason be neglected). In this sense leadership contributes significantly to an environment that motivates teachers for their high commitment to their students’ success (see section 1.6.4 about situating an innovation in a conducive organizational or social context).

Table 5.28: Total variance explained by principal-component factor analysis of teachers' responses

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7,815	39,076	39,076	7,815	39,076	39,076
2	1,752	8,759	47,835	1,752	8,759	47,835
3	1,452	7,260	55,094	1,452	7,260	55,094
4	1,119	5,595	60,689	1,119	5,595	60,689
5	1,098	5,492	66,181	1,098	5,492	66,181
6	,807	4,036	70,217			
7	,772	3,859	74,077			
8	,621	3,104	77,180			
9	,559	2,793	79,973			
10	,514	2,569	82,543			
11	,479	2,395	84,938			
12	,462	2,308	87,246			
13	,428	2,141	89,387			
14	,386	1,930	91,318			
15	,362	1,811	93,129			
16	,343	1,716	94,845			
17	,308	1,539	96,384			
18	,292	1,462	97,846			
19	,227	1,136	98,982			
20	,204	1,018	100,000			

Figure 5.2: Cattell's scree test on teachers' responses showing the amount of variance explained in terms of eigenvalues

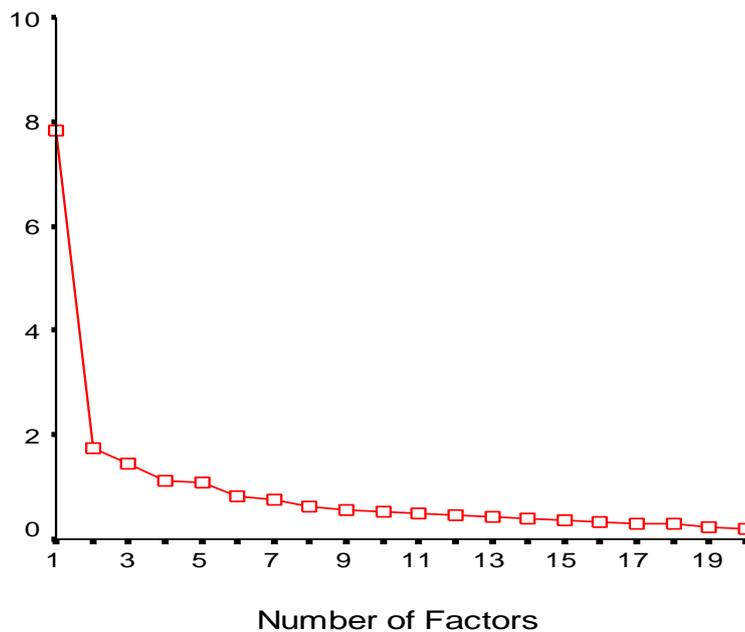




Table 5.29: Rotated factor pattern matrix of the five factors on teachers' responses extracted during the first order factor analysis

Items/ Variables	Factors				
	Leadership	Rewarding	Effective teaching	Capacity building	Positive work-environment
My principal/ principal assistants/ learning cycle leader/ learning area coordinator is an effective instructional leader. (I.8.3.1; V31)	.842	.103	.107	.042	.022
My principal/ principal assistants/ learning cycle leader/ learning area coordinator facilitates communication effectively. (I.8.3.2; V32)	.794	.047	.163	.023	.177
My principal/ principal assistants/ learning cycle leader/ learning area coordinator allows me to be an effective instructional leader. (I.8.3.5; V35)	.690	.196	.201	.240	.074
My principal/ principal assistants/ learning cycle leader/ learning area coordinator supports me in my work with students under the new curriculum. (I.8.3.3; V33)	.683	.218	.222	.299	-.035
My principal/ principal assistants/ learning cycle leader/ learning area coordinator supports shared decision making. (8.3.4; V34)	.678	.188	.194	.210	.141
My principal/ principal assistants/ learning cycle leader/ learning area coordinator is effective in helping us to realize the vision on which the new curriculum is predicated. (I.8.3.6; V36)	.633	.370	.174	.248	.029
I feel that teaching the new curriculum is fun at this school. (I.8.1.4; V 26)	.081	.840	.132	.096	.095
I feel intrinsically rewarded for doing my job well in the context of the new curriculum. (I.8.1.6; V28)	.322	.735	.158	.092	-.010
I feel acknowledged for good work in scope of the new curriculum. (I.8.1.5; V27)	.145	.732	.147	.232	.144
I feel that the school organization is changing and enabling successful implementation of the new curriculum. (I.8.1.3; V25)	.172	.668	.394	-.079	.222
I realize that student achievement can increase through active learning methods. (I.8.4.3; V39)	.184	.229	.770	.200	.201
I realize that the new curriculum has clear learning objectives, and that it emphasizes the acquisition of basic skills. (I.8.4.1; V37)	.154	.263	.726	.213	.003
I realize that effective professional development is helpful in fulfilment of curriculum goals. (I.8.4.5; V38)	.361	.124	.705	.107	.209
I realize that student achievement data are an important tool for improvement of student learning. (I.8.4.4; V40)	.224	.192	.610	.376	-.011



Items/ Variables	Factors				
	Leadership	Rewarding	Effective teaching	Capacity building	Positive work-environment
I have the opportunity to develop my teaching skills individually and co-operating with other colleagues on the new curriculum. (1.8.5.1; V42)	.172	.191	.198	.815	.119
I have the opportunity to grow professionally under the new curriculum dispensation. (1.8.5.2; V43)	.228	.121	.197	.766	.094
I realize that effective parent involvement and other stakeholders is needed for successful implementation of the new curriculum. (1.8.4.5; V41)	.274	-.019	.329	.428	.131
I work with colleagues who treat me with respect. (1.8.2.1; V29)	.062	.180	.002	.295	.798
I feel like I belong at this school. (1.8.1.2; V24)	.072	.046	.399	-.081	.677
I work with colleagues who listen if I have ideas about doing things better in the context of the new curriculum. (1.8.2.2; V30)	.304	.448	.027	.158	.497

5.6.3 Factors underlying students' responses (variables 44-118)

The following factors (F1-F15) were deduced with reference to students' responses (variables 44-118) to the questionnaire after their subjection to a first order factor analysis (Table 5.31 and figure 5.3):

- F1: Preference for Art and Moral Education
- F2: Portuguese, Mathematics and Natural Sciences perceived as the most important subjects
- F3: Guidance and supportive role of teachers
- F4: Student expectations and self-learning motivation
- F5: Friendly school environment
- F6: Curriculum relevancy to real life
- F7: Civic and Moral Education, Social and Natural Sciences perceived as the most important subjects
- F8: Supportive school environment
- F9: Teachers' competence
- F10: Classroom practice
- F11: Learning value awareness
- F12: Relationships among students

- F13: Preference for English as a subject
- F14: Preference for Physical Education as a subject
- F15: Preference for Mathematics textbook

These fifteen factors cumulatively cover about 47% of the total variance, and their eigenvalues were calculated at 16,227; 4,925; 3,639; 2,469; 2,242; 2,201; 1,949; 1,865; 1,826; 1,734; 1,716; 1,666; 1,641; 1,591 and 1,581 respectively (see Table 5.30).

With a view to economy (explaining variance with as few factors as possible), “[...] the criterion could be as low as 50%” (Garson 2006:11) to consider the total variance explained. However, given that the items or variables that correlate with each other measure the same factor, the factors with one or two variables were clustered into correlated factors. Thus, in the first-order factor analysis, the number of factors was reduced to eight. Cronbach’s alpha reliability coefficient was determined for examining the level of inter-correlation of variables in each factor and the consistency of the results (see table 5.32).

Figure 5.3: Cattell’s scree test showing the amount of variance explained in terms of eigenvalues of students’ responses

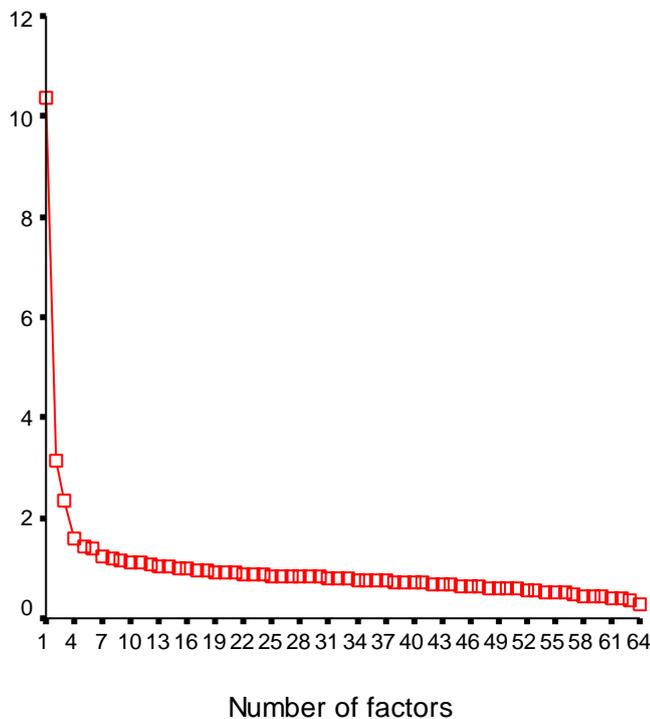


Table 5.30: Total variance explained by the principal-component factor analysis of students' responses

Factor	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10,385	16,227	16,227	10,385	16,227	16,227
2	3,152	4,925	21,152	3,152	4,925	21,152
3	2,329	3,639	24,791	2,329	3,639	24,791
4	1,580	2,469	27,260	1,580	2,469	27,260
5	1,435	2,242	29,503	1,435	2,242	29,503
6	1,409	2,201	31,704	1,409	2,201	31,704
7	1,247	1,949	33,653	1,247	1,949	33,653
8	1,193	1,865	35,518	1,193	1,865	35,518
9	1,169	1,826	37,344	1,169	1,826	37,344
10	1,110	1,734	39,078	1,110	1,734	39,078
11	1,098	1,716	40,794	1,098	1,716	40,794
12	1,066	1,666	42,460	1,066	1,666	42,460
13	1,051	1,641	44,101	1,51	1,641	44,101
14	1,018	1,591	45,692	1,018	1,591	45,692
15	1,012	1,581	47,273	1,012	1,581	47,273
16	,991	1,548	48,821			
.	.	.	.			
.	.	.	.			
.	.	.	.			
64	,270	,422	100,000			

Table 5.31: Rotated factor pattern matrix of the fifteen factors extracted from students' responses during the first-order factor analysis (excluding the items with lower loading)

Variables/ Items	Factors				
	Preference to Art and Moral Education	Portuguese, Mathematics and Natural Sciences as the most important subjects	Student expectations and self-learning motivation	Factor 4	Factor 5
My preferred textbook is Crafts/Arts textbook. (I.9.31.8; V113)	,731	-,019	,023	,027	,037
My preferred textbook is Visual/ Aesthetic Education Textbook (I.9.31.9; V114)	,707	,115	,068	,041	,008
I think that the important subject is Music Education. (I.9.30.10; V104)	,643	,064	,157	,043	,168
My preferred textbook is Music Education textbook. (I.9.31.10; V115)	,623	,133	,078	,035	,162
I think that the important subject is Crafts/Arts. (I.9.30.8; V102)	,621	-,051	,046	,056	,032
I think that the important subject is Visual/ Aesthetic Education. (I.9.30.9; V103)	,583	,018	,041	,019	,012
My preferred textbook is Moral and Civic Education textbook. (I.9.31.5; V110)	,456	,190	,003	,127	,019
My preferred textbook is Portuguese textbook. (I.9.31.1; V106)	,048	,592	,026	,003	,050
I think that the important subject is Mathematics. (I.9.30.6; V100)	,004	,569	,060	,132	,015
I think that the important subject is Portuguese. (I.9.30.1; V95)	,022	,535	,103	,039	,083
Beyond my textbooks, I read other books. (I.9.32.1; V117)	,048	,510	-,006	,224	,038
My preferred textbook is Natural Sciences textbook. (I.9.31.7; V112)	,254	,461	-,011	,024	-,007
My teachers care about me. (I. 9.26.8; V76)	,091	-,021	,594	-,040	,170
My teachers understand when students have personal problems. (I.9.26.3; V71)	,010	,042	,573	,084	,132
My teachers Give me individual attention when I need it. (I.9.26.11; V79)	,075	-,005	,554	,139	,158
My teachers have confidence in me. (I.9.26.5; V73)	,072	,066	,472	,243	,043
My teachers know me well. (I.9.26.6 ; V74)	,129	,141	,453	,085	-,034
My teachers help me gain confidence in my ability to learn. (I.9.26.4; V72)	,143	,096	,351	,305	,122
My teachers are excited about the subjects they teach. (I.9.26.10; V78)	,137	,282	,301	,243	,250



Variables/ Items	Factor 1	Factor 2	Factor 3	Student expectations and self-learning motivation	Friendly School Environment
I am doing my best at school. (I.9.21; V64)	,045	,060	,018	,615	,012
My teachers expect me to do my best. (I.9.26.2; V70)	,022	,038	,205	,553	,020
Doing well in school makes me feel good about myself. (I.9.20; V63)	,058	,155	,159	,520	,051
My teachers expect students to do their best. (I.9. 26.1; V69)	,026	,003	,125	,402	,066
I find what I learn in school to be relevant to real life. (I.9.13; V56)	,082	,279	-,098	,393	,292
I feel successful at school. (I.9.14; V57)	,109	,215	,192	,371	,065
I like to learn. (I.9.19; V62)	,035	,297	-,089	,332	,140
Participating in extracurricular activities is important to me. (I.9.24; V67)	,071	,019	,098	,297	,142
I like this school. (I.9.17; V60)	,125	,164	,130	,117	,685
I think this is a good School. (I.9.18; V61)	,118	,108	,201	,083	,656
Schooling is fun here. (I.9.16; V59)	,024	-,034	,116	,093	,613
I feel safe at this school. (I.9.1; V44)	,106	,055	,180	-,054	,443
I feel like I belong at this school. (I.9.2; V45)	,008	,046	-,025	,117	,348



Variables/ Items	Factor 3	Factor 4	Factor 5	Curriculum relevancy to real life	Civic and Moral Education, Social and Natural Sciences as the most important subjects
The new curriculum will contribute to my education in reference to my ability to read. (I.9.27.2; V81)	,080	,103	,139	,581	,051
The new curriculum will contribute to my education in reference to my ability to write. (I.9.27.1; V80)	,071	,060	,134	,580	,076
The new curriculum will contribute to my education in reference to my ability to present information. (I.9.27.4; V83)	,155	,116	,123	,545	,068
The new curriculum will contribute to my education in reference to my ability to cope with technology. (I.9.27.5; V84)	,144	,060	,130	,543	-,012
The new curriculum will contribute to my education in reference to my ability with Mathematics. (I.9.27.3; V82)	,112	,192	,036	,483	,096
I think that the important subject is Social Sciences. (I.9.30.4; V98)	,047	,112	,067	,044	,645
My preferred textbook is Social Sciences textbook. (I.9.31.4; V109)	-,035	,116	,036	,038	,548
I think that the important subject is Natural Sciences. (I.9.30.7; V101)	,027	,076	,016	,167	,482
I think that the important subject is Moral and Civic Education. (I.9.30.5; V99)	,038	,150	,156	,035	,466

	Factor 7	Supportive school environment	Factor 9	Factor 10	Factor 11	Factor 12
School administrators treat me with respect. (I.9.8; V51)	,026	,642	,037	,031	,065	,000
Teachers treat me with respect. (I.9.7; V50)	,023	,590	,034	,010	,001	-,038
I am treated with respect by the office staff. (I.9.9; V52)	,166	,504	,026	,025	,159	,177
Teachers encourage me to assess the quality of my own work. (I.9.5; V48)	,090	,354	,013	,121	,164	-,080
I understand how to apply what I learn to real life/ situations. (I.9.4; V47)	-,031	,336	-,002	-,022	,144	,113



Variables/ Items	Factor 7	Factor 8	Teachers' competence	Classroom practices	Learning value awareness	Factor 12
My teachers make learning fun. (I.9.26.9; V77)	,015	-,004	,928	,020	,008	-,012
My teachers listen to my ideas. (I.9.26.7; V75)	,042	,104	,854	,056	,044	,103
In the teaching of the new curriculum, time is spent working in small groups. (I.9.28.3; V87)	-,046	-,021	,012	,741	,072	,017
I work well under the new curriculum when I am working in a small group. (I.9.29.3; V93)	,045	,057	,039	,661	,009	,032
In the teaching of the new curriculum, time is spent in whole-class discussions with the teacher. (I.9.28.2; V86)	,190	,054	,012	,410	,106	-,043
I work well under the new curriculum when I am working in projects or research. (I.9.29.1; V91)	-,004	,023	,029	,333	,124	,157
I am personally responsible for what I learn. (I.9.15; V58)	,029	,131	-,004	,103	,561	-,035
I assess my own work. (I.9.6; V49)	-,041	,134	,031	,079	,541	,024
The work at this school is challenging. (I.9.12; V55)	,172	,153	,012	,158	,334	,069



Variables/ Items	Factor 11	Relationships among students	Preference to English subject	Preference to Physical Education subject	Preference to Mathematics textbook
Students at this school have opportunities to learn from each other. (I.9.22; V65)	-,026	,592	,056	,007	,032
Students at this school respect other students who are different from them. (I.9.25; V68)	,259	,470	-,010	,017	-,010
Students at this school have opportunities to learn about each other. (I.9.23; V66)	-,093	,434	,114	,006	,037
Other students at this school treat me with respect. (I.9.10; V53)	,343	,421	-,122	-,155	-,117
I think that the important subject is English. (I. 9.30.3; V97)	,070	,002	,774	-,075	,009
My preferred textbook is English textbook. (I. 9.31.3; V108)	,031	,124	,708	,186	-,053
My preferred textbooks are Physical Education textbook. (I.9.31.11; V116)	,146	-,063	,076	,554	,001
I think that the important subject is Physical Education. (I.9.30.11; V105)	,174	-,198	,190	,315	,049
My preferred textbook is Mathematics textbook. (I.9.31.6; V111)	,017	,017	-,033	,010	,916

Table 5.32: Clustering of eight correlated factors extracted during first order factor analysis

Factors	Cronbach's Alpha	Clustering of variables
F1: Preference to Art subjects	0,8470	V113; V114; V104; V115; V102; V103 V116; V105
F2: Mathematics and natural Sciences perceived as the most important subjects	0,7399	V106; V112; V101; V111
F3: Competence of teachers and classroom practices	0,7669	V77; V75; V87; V93; V76; V71; V79 V73; V74; V86; V72; V91; V78
F4: Student expectations and self-learning motivation	0,6994	V64; V70; V63; V69; V56; V57; V62 V67
F5: Friendly and supportive school environment	0,7895	V60; V61; V59; V44; V45; V51; V50 V52; V48; V47; V65; V68; V66; V53
F6: Curriculum relevancy to real life and self-motivation	0,6633	V81; V80; V83, V84; V82; V58; V49 V55
F7: Preference to Moral Education and Social Sciences	0,7254	V110; V98; V109; V99
F8: Portuguese and English perceived as the most important subjects	0,6841	V106, V95; V97; V108; V117

5.7 RESULTS OF SECOND-ORDER CONFIRMATIVE FACTOR ANALYSIS

5.7.1 Confirmatory factor analysis of four factors extracted from principals' responses during the first order investigative factor analysis

In Table 5.33 showing the second-order factor analysis, two of four hypothetical factors extracted in the first factor analysis had eigenvalues of less than one. Therefore, the confirmatory analysis eliminated all but two factors that explained 39 percent of the total variance and produced eigenvalues of 1.730 and 2.170 respectively. Field (2000) notes that the retained factors reflect the common variance in the data although they do not full explain entirely the original variables. In other words, certain factors contain hidden values, reflected to some extent in the total variance explained by the isolated factors.

Table 5.33: Total variance explained by the maximum likelihood method of two factors derived from principals' responses during the second factor analysis

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.373	33.728	33.728	1.730	17.302	17.302
2	1.360	13.596	47.325	2.170	21.698	39.000
3	1.182	11.817	59.141	.917	9.166	48.166
4	1.005	10.048	68.189	.537	5.365	53.531
5	.816	8.159	77.347			
6	.688	6.878	84.226			
7	.533	5.335	89.560			
8	.405	4.048	93.608			
9	.341	3.409	97.017			
10	.298	2.983	100.000			

Which variables are subsumed by the extracted two factors?

To answer this question, a pattern matrix was drawn up that consisted of the rotated four factors extracted from the principals' responses during the exploratory factor analysis. The items or variables that correlate with each other measure the same factor. So, correlating variables were clustered into two new factors. The intercorrelation of variables was measured by Cronbach's alpha (see Tables 5.34 and 5.35). Thus, the following factors were identified from the rotated factor pattern matrix by reclustering factors:

- **Factor 1:** Leadership and capacity building
- **Factor 2:** Innovative classroom practices

Table 5.34: Rotated factor pattern matrix of the four factors on the responses of Principals extracted in exploratory factor analysis during the second order factor analysis (excluded items with lower loadings)

Items/ Variables	Factor			
	Factor 1	Factor 2	Factor 3	Factor 4
I try to promote student achievement under the new curriculum, by maximizing the amount of school time used for learning under new curriculum. (I.7.1.9;V18)	.781	.183	.047	.150
I am satisfied that a new school organization is being implemented to cope with the demand of new curriculum. (I.7.2.1; V19)	.687	.369	.239	-.122
I try to promote student achievement under the new curriculum, by challenging teachers and students continuously to fulfil curriculum goals. (I. 7.1.4; V13)	.638	.022	.074	.209
I try to promote student achievement under the new curriculum, putting in place an action plan produced collectively in school for effective implementation of the new curriculum. (I.7.1.2; V11)	.032	.812	.269	.253
I try to promote student achievement under the new curriculum, by cultivating close relationship with teachers, other staff members, students and parents. (I.7.1.1; V10)	.149	.598	.034	.124
I try to promote student achievement under the new curriculum, through effective professional development. (I.7.1.3; V12)	.278	.410	.105	-.038
I am satisfied that teachers are using a variety of active methods in their teaching as required by the new curriculum. (I.7.2.4; V22)	.176	.035	.983	.027
I am satisfied that teachers are diligent in their endeavour to observe interdisciplinarity in the lessons plans they make according to the new curriculum (I.7.2.2; V20)	.021	.147	.469	.085
I try to promote student achievement under the new curriculum, by monitoring teachers' performance under the new curriculum. (I.7.1.8; V17)	.248	.205	.314	.215
I try to promote student achievement in the context of new curriculum, by holding regular and productive staff meetings. (I.7.1.5; V 14)	.162	.175	.130	.725

Table 5.35: Clustering of four factors into two confirmed factors of responses of surveyed Principals extracted during second order factor analysis

Factors	Cronbach's Alpha	Clustering of variables
Leadership and Capacity Building (1)	0.72	V18; V19; V13; V14
Innovative Classroom Practices (2)	0.68	V10; V11; V22; V20 V12; V17

Table 5.35 shows that factors 1 and 2 have a cronbachs alpha value of 0.72 and 0.68 respectively, which are greater than 0.60, indicating high internal consistency and are considered one-dimensional (linear combination).

Three further important conditions to support the result of this confirmatory factor analysis are met, namely the Kaiser-Meyer-Olkin measure of sampling adequacy (0.718), Bartlett's test (0.000) and the Goodness-of-fit test of .183 (see Tables 5.36 and 5.37).

Table 5.36: Kaiser- Meyer-Olkin Measure of Sampling (KMO) and Bartlett's test of Sphericity of two factors extracted from principals' responses during the second-order factor analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,718
Bartlett's Test of Sphericity	Approx. Chi-Square	318,351
	Df	45
	Sig.	0,000

The value yielded by Kaiser-Meyer-Olkin measure of sampling adequacy was 0.718, which is greater than 0.50, showing that a sufficient number of items are actually predicated by each factor. The value yielded by Bartlett's Test of Sphericity was 0.000, which is less than 0.05, indicating that the original variables correlate highly enough (but not so highly that they are identical) to provide a reasonable basis for factor analysis.

Table 5.37: Goodness-of-fit test on two factors extracted from principals' responses in the second-order factor analysis

Chi-Square	Df	Sig.
14,987	11	0,183

The goodness-of-fit test value is 0.183, which is greater than .05 and therefore not significant indicating that the numbers of factors to be extracted is adequate.

5.7.2 Confirmatory factor analysis of five factors extracted from teachers' responses during the first order investigative factor analysis

In Table 5.38 reflecting second-order factor analysis, three of five hypothetical factors extracted in the first factor analysis had eigenvalues below one. Therefore, the confirmatory analysis eliminated all but two factors that explained approximately 42.4 percent of the total variance and produced eigenvalues of 2.910 and 3.024 respectively (see Table 5.38). As noted by Field (2000) the retained factors reflect the common variance in the data although they do not fully explain the original variables. In other words, certain factors contain hidden values, reflected to some extent in the total variance explained by the isolated factors.

Table 5.38: Total variance explained by the maximum likelihood method of two factors derived from teachers' responses during the second factor analysis

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.587	39.904	39.904	2.910	20.788	20.788
2	1.445	10.324	50.228	3.024	21.599	42.388
3	1.226	9.046	59.274	.919	6.562	48.950
4	1.057	7.552	66.825	.896	6.398	55.348
5	.787	5.621	72.446	.567	4.049	59.398
6	.750	5.356	77.803			
7	.538	3.841	81.643			
.	.	.	.			
.	.	.	.			
.	.	.	.			
13	.282	2.012	98.021			
14	.277	1.979	100.000			

Which variables are subsumed by the extracted two factors?

To answer this question, a pattern matrix was drawn up that consisted of the rotated five factors extracted from the teachers' responses during the exploratory factor analysis. The items or variables that correlate with each other measure the same factor. Therefore, correlating variables were clustered into two new factors. The intercorrelation of variables was measured by cronbach's alpha (see tables 5.39 and 5.40). Thus, the following factors were identified from the rotated factor pattern matrix by reclustering factors:

- **Factor 1:** Leadership and rewarding
- **Factor 2:** Innovative classroom practices and capacity building

Looking carefully at the Table 5.39, we see that the items or variables **I.8.1.5; V28, I.8.4.2; V38 and I.8.4.1; V37** do not have a (relatively) high factor loading to only one factor. That is to say, according to Field (200:425), these variables measure different aspects of some common underlying dimension (see Table 5.39). Nevertheless, as can be seen from Table 5.39, each variable mentioned above is ‘particularly higher’ than only one factor that “specially” belongs. Bryman and Cramer (1999) note that “in general the meaning of a factor is determined by the items which load most highly on it”. The same writers also emphasize that the issue to identify which items to ignore when interpreting a factor is arguable. Bryman and Cramer (1999) point out that many researchers consider all loadings in excess of 0.3 regardless of whether any variables are thereby implicated in more than one factor. I also decided to follow the same criterion. Anyway, it is important to note that some variables measure different aspects of a common underlying dimension. In other words, some of the items representing certain factors have high internal consistencies with other factors. The construction of the Table 5.40 which shows the clustering of five factors into two confirmed factors, based on the participating teachers’ responses extracted during second-order factor analysis, is grounded on the fact that some variables measure different aspects of a common underlying dimension.

Table 5.39: Rotated factor pattern matrix consisting of the five factors derived from the responses of teachers by the exploratory factor analysis during the second-order factor analysis (excluding items with lower loadings)

Labelled items or variables	Factors				
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
My principal/ principal assistants/ learning cycle leader/ learning area coordinator is an effective instructional leader. (I.8.3.1; V31)	.782	.123	.127	.092	.038
My principal/ principal assistants/ learning cycle leader/ learning area coordinator facilitates communication effectively. (I.8.3.2; V32)	.729	.095	.204	.100	.067
My principal/ principal assistants/ learning cycle leader/ learning area coordinator allows me to be an effective instructional leader. (I.8.3.5; V35)	.644	.204	.168	.232	.145
My principal/ principal assistants/ learning cycle leader/ learning area coordinator supports shared decision making. (I.8.3.4;V34)	.578	.208	.261	.211	.054
I feel that teaching the new curriculum is fun at this school. (I.8.1.3; V 26)	.079	.730	.135	.106	.130
I feel intrinsically rewarded for doing my job well in the context of the new curriculum. (I.8.1.5;V28)	.320	.709	.142	.096	.100
I feel acknowledged for good work in scope of the new curriculum. (I.8.1.4; V27)	.140	.707	.245	.198	.011
I realize that student achievement can increase through active learning methods. (I.8.4.3; V39)	.199	.216	.682	.0193	.295
I realize that effective professional development is helpful in fulfilment of curriculum goals. (I.8.4.2; V38)	.326	.155	.649	.145	.214
I feel like I belong at this school. (I.8.1.1; V24)	.087	.135	.439	.078	.041
I realize that effective parent involvement and other stakeholders is needed for successful implementation of the new curriculum. (I.8.4.5; V41)	.237	.088	.388	.283	.006
I have the opportunity to develop my teaching skills individually and co-operating with other colleagues on the new curriculum. (I.8.5.1; V42)	.166	.188	.148	.813	.0165
I have the opportunity to grow professionally under the new curriculum dispensation. (I.8.5.2;V43)	.224	.151	.251	.664	.064
I realize that the new curriculum has clear learning objectives, and that it emphasizes the acquisition of basic skills. (I.8.4.1; V37)	.174	.207	.355	.214	.869

Table 5.40: Clustering of five factors into two confirmed factors derived from responses of participating teachers during the second- order factor analysis

Factors	Cronbach's Alpha	Clustering of variables
Leadership and rewarding (1)	0.81	V31; V32; V35; V34; V26 V28; V27; V24; V41
Innovative classroom practices and capacity building (2)	0.82	V39; V38; V42; V43; V37

Table 5.40 shows that the factors 1 and 2 have a cronbachs alpha value of 0.81 and 0.82 respectively, which are greater than 0.60, indicating high internal consistency and that they are one- dimensional (linear combination).

Three further important conditions to support the result of this confirmatory factor analysis are met, namely the Kaiser- Meyer-Olkin measure of sampling adequacy (0.871), Bartlett's test (0.000) and the Goodness-of-fit test (0.352) (see tables 5.41 and 5.42).

Table 5.41: Kaiser- Meyer-Olkin Measure of Sampling (KMO) and Bartlett's Test of Sphericity of two factors on the responses of teachers retained in the second factor analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,871
Bartlett's Test of Sphericity	Approx. Chi-Square	1268,900
	Df	91
	Sig.	0,000

The Kaiser- Meyer-Olkin measure of sampling adequacy of 0.871, which is greater than 0.50, shows that a sufficient number of items are actually predicated by each factor. The Bartlett's Test of Sphericity of 0.000, which is less than 0.05, indicates that the original variables are correlated highly enough (but not so highly that they are identical) to provide a reasonable basis for factor analysis.

Table 5.42: Goodness-of-fit Test on two factors of three factors on the responses of Teachers retained in the second factor analysis

Chi-Square	Df	Sig.
33,397	31	0,352

The goodness-of-fit test is 0.352. It is greater than 0.05 and, therefore, not significant, indicating that the numbers of factors to be retained is adequate.

5.7.3 Confirmatory factor analysis of eight factors extracted from students' responses during the first-order investigative factor analysis

In table 5.43 reflecting the second-order factor analysis, four of eight hypothetical factors extracted in the first factor analysis had eigenvalues below one. Therefore, the confirmatory analysis eliminated all but four factors that explained close to 29 percent of the total variance and produced eigenvalues of 9.462, 2.388, 1.937 and 1.304 (See table 5.43). The retained four factors reflect the common variance in the data although they do not fully explain the original variables (Field, 2000). That is to say, certain factors contain hidden values, reflected to some extent in the total variance explained by the isolated factors.

Table 5.43: Total variance explained by the maximum likelihood method of four factors derived from students' responses during the second-order factor analysis

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10,306	19,818	19,818	9,462	18,197	18,197
2	3,228	6,209	26,027	2,388	4,593	22,789
3	2,595	4,990	31,017	1,937	3,724	26,514
4	1,454	2,797	33,813	1,304	2,508	29,022
5	1,385	2,664	36,478	,687	1,320	30,342
6	1,185	2,278	38,756	,720	1,384	31,726
7	1,182	2,273	41,029	,552	1,062	32,788
8	1,146	2,203	43,232	,509	,978	33,766
9	1,097	2,109	45,341			
.	.	.	.			
.	.	.	.			
.	.	.	.			
52	,302	,581	100,000			

Extraction Method: Maximum Likelihood.

Which variables are subsumed by the extracted four factors?

To answer this question a pattern matrix was drawn up that consisted of the rotated factor eight factors extracted from the students' responses during the exploratory factor analysis. Since the items or variables that correlate which others measure the same factor, certain variables were clustered with others building new factor. The

intercorrelation of variables was measured by means of the Cronbach alpha test (See tables 5.44 and 5.45).

Thus, by reclustering the following factors were identified from the rotated factor pattern matrix:

- Factor 1:** Student attitude to learning activity
- Factor 2:** Subject content of the curricular
- Factor 3:** Friendly and supportive school environment
- Factor 4:** Curriculum relevancy to real life and self-learning motivation

Looking carefully at Table 5.44, we see that the item or variable **I.9.26.4; V72** has simultaneously a (relatively) high factor loading on factors three and four. As noted earlier, according to Field (200:425) this variable measures different aspects of some common underlying dimension (see Table 5.44). Nevertheless, we also see, in table 5.44, that **V72** is ‘particularly’ higher in only one factor that “specially” belongs. Bryman and Cramer (1999) highlight that “in general the meaning of a factor is determined by the items which load most highly on it”. Note that the same writers also emphasize that the issue to identify which items to ignore when interpreting a factor is arguable. Bryman and Cramer (1999) point out that many researchers consider all loadings in excess of 0.3 regardless of whether any variables are thereby implicated in more than one factor. Anyway, it is important to bear in mind that some variables measure several aspects of a common underlying dimension. In other words, some of the items representing certain factors have high internal consistencies with other factors. This fact is exemplified in Table 5.45 which consists in clustering eight factors so that they are reduced to four derived from participating students’ responses during the second-order factor analysis.

Table 5.44: Rotated factor pattern matrix consisting of the eight factors derived from the students' responses during the second-order factor analysis (excluding items with lower loadings)

Variables/ Items	Factor							
	1	2	3	4	5	6	7	8
My teachers care about me. (I. 9.26.8; V76)	,604	,078	-,003	,025	,033	-,004	,023	,052
My teachers listen to my ideas. (I.9.26.7; V75)	,511	,052	,058	,168	,027	,004	-,067	,046
My teachers have confidence in me. (I.9.26.5; V73)	,511	,085	,063	,246	,089	,015	-,057	,029
Students at this school respect other students who are different from them. (I.9.25; V68)	,497	,091	-,024	,058	,012	,019	,059	-,029
My teachers know me well. (I.9.26.6; V74)	,460	,114	,105	,132	,112	,021	-,087	,043
My teachers understand when students have personal problems. (I.9.26.3; V71)	,445	,062	,052	,163	,059	,010	,059	-,013
My teachers Give me individual attention when I need it.(I.9.26.11; V79)	,442	,087	,005	,173	,096	,036	,011	-,059
I am treated with respect by the office staff. (I9.9; V52)	,441	,100	,052	-,015	,077	,026	,084	,049
Teachers treat me with respect. (I.9.7; V50)	,415	,069	,117	,072	,082	,007	,173	,023
I feel safe at this school. (I.9.1; V44)	,412	,101	,065	-,036	,103	-,031	,228	-,030
Schooling is fun here. (I.9.16; V59)	,412	,070	,047	,109	-,008	,010	,356	,027
My teachers make learning fun. (I.9.26.9; V77)	,399	,134	,111	,231	,071	,004	,119	,066
School administrators treat me with respect. (I.9.8; V51)	,382	,061	,136	,089	,129	,028	,122	,042
Other students at this school treat me with respect. (I.9.10; V53)	,373	,093	,017	,071	-,030	-,005	,084	,054
Students at this school have opportunities to learn from each other. (I.9.22; V65)	,349	,104	,119	,298	,026	,013	,059	,010
The new curriculum will contribute to my education in reference to my ability to cope with technology. (I.9.27.5; V84)	,324	,211	,042	,078	,286	,062	,004	-,042
The new curriculum will contribute to my education in reference to my ability to present information. (I.9.27.4; V83)	,324	,146	,128	,159	,319	,042	,017	,015
Students at this school have opportunities to learn about each other. (I.9.23; V66)	,319	,078	,160	,305	,025	,045	,084	,023
I work well under the new curriculum when the teachers are leading discussions with the whole class. (I.9. 29.2; V92)	,308	,146	,094	,044	,133	,042	,020	,068
I work well under the new curriculum when I am working in small group. (I.9.29.3; V93)	,259	,150	,091	,097	,154	,042	,033	,039



Variables/ Items	Factor							
	1	2	3	4	5	6	7	8
I am personally responsible for what I learn. (I.9.15; V58)	,232	,087	,061	,052	,192	,065	-,003	,013
I assess my own work. (I.9.6; V49)	,221	,104	,107	,082	,144	,067	,014	,006
In the teaching of the new curriculum, time is spent working in small groups. (I.9.28.3; V87)	,165	,118	,085	-,014	,117	,012	,051	,012
My preferred textbook is Crafts/Arts textbook. (I.9.31.8; V113)	,174	,726	,045	,038	,027	,010	,039	-,181
My preferred textbook is Visual/ Aesthetic Education textbook. (I.9.31.9; V114)	,161	,677	,126	,051	,064	,023	-,001	-,036
I think that the important subject is Crafts/Arts. (I.9.30.8; V102)	,128	,673	-,027	,090	,117	,086	,036	,071
I think that the important subject is Visual/ Aesthetic Education. (I.9.30.9; V103)	,099	,659	,021	,105	,149	,082	,028	,171
I think that the important subject is Music Education. (I.9.30.10; V104)	,166	,595	,033	,046	,095	,110	,099	,143
My preferred textbook is Music Education textbook (I.9.31.10; V115)	,189	,563	,143	,030	-,003	,039	,100	-,004
My preferred textbook is Moral and Civic Education textbook. (I.9.31.5; V110)	,115	,489	,238	,150	,050	,031	,012	,124
I think that the important subject is Moral and Civic Education. (I.9.30.5; V99)	,050	,457	,144	,176	,078	,116	,096	,399
My preferred textbook is Social Sciences textbook. (I.9.31.4; V109)	,165	,418	,248	,127	-,021	,029	,017	,276
My preferred textbook is Physical Education textbook. (I.9.31.11; V116)	,152	,418	,260	,009	,070	,051	-,007	-,034
My preferred textbook is Portuguese textbook. (I.9.31.1; V106)	,062	,129	,657	,140	,153	,064	,104	,025
I think that the important subject is Mathematics. (I.9.30.6; V100)	,091	,089	,647	,151	,088	,063	,017	,067
My preferred textbook is Mathematics textbook. (I.9.31.6; V111)	,116	,141	,635	,081	,013	,048	-,004	,001
I think that the important subject is Portuguese. (I.9.30.1; V95)	,060	,057	,585	,220	,235	,102	,157	-,013
My preferred textbook is Natural Sciences textbook. (I.9.31.7; V112)	,136	,333	,472	,024	,111	-,001	-,024	,222
I think that the important subject is Natural Sciences. (I.9.30.7; V101)	,140	,302	,440	,065	,176	,012	-,014	,347
Beyond my textbooks, I read other books. (I.9.32.1; V117)	,073	,050	,386	,208	,196	,069	,074	,009
My teachers expect me to do my best. (I.9.26.2; V70)	,221	,060	,108	,478	,102	,036	,017	,028
I am doing my best in school. (I.9.21; V64)	,122	,087	,120	,433	,084	,040	,002	,079



My teachers expect students to do their best. (I.9.26.1; V69)	,219	,084	,152	,427	,136	,015	,080	,043
Doing well in school makes me feel good about myself. (I.9.20; V63)	,206	,085	,166	,373	,057	,071	,035	,014
The new curriculum will contribute to my education in reference to my ability to write. (I.9.27.1; V80)	,168	,082	,254	,133	,589	,077	,084	,066
The new curriculum will contribute to my education in reference to my ability to read. (I.9.27.2; V81)	,192	,084	,293	,161	,576	-,012	,087	,024
The new curriculum will contribute to my education in reference to my ability with Mathematics. (I.9.27.3; V82)	,219	,113	,236	,233	,290	,050	,012	,018
I think that the important subject is English. (I.9.30.3; V97)	,055	,244	,163	,109	,115	,833	,041	,146
My preferred textbook is English textbook. (I.9.31.3; V108)	,071	,316	,244	,121	,073	,448	-,068	-,033
I like this school. (I.9.17; V60)	,346	,123	,153	,104	,135	-,001	,544	,051
I think this is a good School. (I.9.18; V61)	,437	,114	,100	,076	,083	-,004	,457	,007
I think that the important subject is Social Sciences. (I.9.30.4; V98)	,109	,389	,149	,169	,022	,133	,039	,446

Table 5.45: Clustering of eight factors into four confirmed factors derived from responses of participating students during the second order factor analysis

Factors	Cronbach's Alpha	Clustering of variables
Student attitude to learning activity(1)	0.6059	V70; V64; V69; V63; V117
Subject content of the curricular (2)	0.8854	V113; V114; V102; V103; V104; V115; V110 V99 ; V109; V116; V106; V100; V111; V95 V112; V101; V97; V108; V98 ;
Friendly and supportive school environment (3)	0.8389	V76 ; V75 ; V73 ; V68 ; V74 ; V71; V79; V52 ; V50; V44 ; V59 ; V77 ; V51; V53; V65; V66; V87 ; V60 ; V61
Curriculum relevancy to real life and self-learning motivation (4)	0.6831	V80 ; V81 ; V84; V83; V92; V82; V93; V58; V49

Table 5.45 shows that the four factors have Cronbachs alpha value of 0,6059; 0,8854; 0,8389 and 0,6831 respectively, all of which are greater than 0,60, indicating high internal consistency and are considered unidimensional. So, the reduction of factors yielded four confirmed factors. Two further important (fulfilled) conditions to support the result of this confirmatory factor analysis are the Kaiser-Meyer-Olkin measure of sampling adequacy valued at 0,932 and Bartlett's test figure of 0,000. (see Table 5.46)

Table 5.46: Kaiser- Meyer-Olkin Measure of Sampling (KMO) and Bartlett's Test of Sphericity of six factors on the responses of students retained in the second factor analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,932
Bartlett's Test of Sphericity	Approx. Chi-Square	37905,289
	Df	1326
	Sig.	0,000

The Kaiser-Meyer-Olkin value expressing sampling adequacy was 0,932, which is greater than 0,50, and therefore shows that a sufficient number of items are actually predicated by each factor. The value derived for Bartlett's test of sphericity was 0,000, which is below 0.005, indicating that the original variables correlate high enough (but not to the point of identity) to provide a reasonable basis for factor analysis.

Thus, the four components obtained as indicated were kept for further study.

5.8 SUMMARY

Following the methodology presented in chapter four, chapter five is divided into two parts: A and B. Part A deals with frequency analysis of the responses while part B is concerned with the factor analysis of the data. The factor analysis conducted in this research is comprised of first- order investigative factor analysis and second-order confirmative factor analysis. In the first order investigative factor analysis, related variables were identified that can be clustered to form one combined variable or factor. By this means sufficient evidence was gained to form a hypothesis about the number of factors underlying the data. A second-order confirmative factor analysis was conducted to assess the validity and reliability of the number of factors gained from the first order investigative factor analysis.

Participants in this study included 124 principals, 221 teachers and 2 705 students from the three selected provinces, namely Niassa, Sofala and Maputo City.

Significant variation ($p = 0.000, p \leq 0.05$) in the levels of principals' academic qualifications within and across the relevant provinces was noted. However, male and female principals' academic qualifications did not differ significantly within and across provinces ($p = 0.990, p \geq 0.05$). Sofala principals' academic qualifications were reported relatively lower than in the other two provinces at the time of the study. Participating teachers' academic qualifications varied significantly ($p = 0.013, p \leq 0.05$) within and across provinces, but differences between male and female teachers' academic qualifications were statistically insignificant ($p = 0.197, p \geq 0.05$). It is worth mentioning that the majority of the participating teachers had a senior secondary education on a level that was consistent throughout the three provinces.

The majority of principals who participated in the study (47 or 37.9% of the sample) had trained themselves for their school-management task. This applied for the total sample across the three provinces. The induction workshop was poorly attended in Niassa Province: Only 8 out of 41 (19.5%) participants in the investigation were trained by means of induction workshops. The teachers who participated in the research, held a variety of pedagogical qualifications despite the fact that they were teaching the same level, but most of them (101 or 45.7%) had IMAP teaching qualifications.

Participating principals' experience as school managers varied significantly ($p = 0.003; p \leq 0.05$) within the provinces and in each category of experience. Indeed, of the total of 124 drawn from the selected three provinces 78 principals had between one and five years' experience as school managers, 27 had more than five and less than eleven years, 12 between eleven and fifteen years and 7 sixteen years' experience. The reason for this variation is discussed in chapter six. Meanwhile, by gender there was no significant variation ($p = 0.389; p \geq 0.05$). There is a significant difference ($p = 0.000; p \leq 0.05$) in teaching experience at EP2 among surveyed teachers within and across the provinces. The majority of surveyed teachers have been working at upper primary level for five years or less. Indeed, out of 221 teachers from the three provinces who participated in the research, 125 (56.6%) had between one and five years of teaching experience at upper primary level; 61 (27.6%) have been working for between 6 and 10 years; 22 (10.0%) between eleven

and fifteen years; and only 13 (5.9%) for sixteen years and more. In spite of significant variation across provinces, in aged teaching experience groups, Maputo City appeared to be the province where those groups are relatively balanced. Strikingly, a comparison by gender of teachers' experience working at upper primary level (EP2) from the three provinces who participated in the study shows that there is no significant difference.

In general the attitudes of participating principals to their leadership role in implementation of the new curriculum were highly positive, although they did intimate that there was a problem in maximizing the amount of school time used for learning under the new curriculum. It seemed that the level of satisfaction of Principals of Niassa Province regarding "local curriculum" development and its initial implementation was relatively at schools in the other two provinces (Maputo City and Sofala). The surveyed principals of Maputo City were more pessimistic in this regard. Another concern of principals from Maputo City is related to the new school organization, which is being implemented within their schools to cope with the requirements of the new curriculum. In effect, compared with the surveyed principals from the other two provinces, participants from Maputo City reported the less satisfaction with the process of school restructuring and reculturing towards implementation of the new curriculum and with teachers efforts to maintain the interdisciplinarity principle in classroom practices as set up in the new curriculum. All these matters concerning principals' perceptions of their leadership role in the process of implementing the new curriculum are discussed in chapter 6 (section 6.2.3).

Broadly, the surveyed teachers expressed a lack of confidence in attitudes and beliefs about implementing the new curriculum. The majority of teachers who participated expressed positive feelings about: (1) school ownership - V24; (2) mutual respect - V29; (3) sharing innovative ideas - V30; (4) effective communication facilitated by principals - V32; (5) pertinent involvement of parents and other stakeholders - V41.

More teachers from Maputo City than from their counterparts declared that implementation of the new curriculum provided them with opportunities to develop

teaching skills individually and in collaboration with colleagues. Niassa Province placed second in the expression of this opinion. The discussion of the participating teachers' attitudes and beliefs follows in chapter six (section 6.3.4).

The perceptions, beliefs and attitudes of learners regarding the new curriculum are summarized in Table 5.25 and discussed in section 6.5 of chapter six. Some of the collected data synthesized in Table 5.25 are:

- A lower percentage of the surveyed students (22.5%) clearly stated that reading for them does not extend beyond their school textbooks.
- Other findings are that respondents are concerned about the issue of local languages. So, while 53.0% of participating students indicated explicitly or implicitly that they consider local languages to be unimportant, 56.0% actually declared that they actively dislike the local language textbook.
- According to the students' opinions expressed during the survey, there was a tendency to apply less teacher centred, monotonous or tedious methods in classroom practices. Hence 50.1%, 50.9%, 60.8%, 63.5% and 69.7% of the surveyed students unambiguously declared that in teaching of new curriculum, time is spent (1) in whole-class discussions with the teacher, (2) listening to teacher talk respectively (3) analyzing individual or class performance (4) reading and (5) working in small groups respectively. Concurrently, the students' opinions expose the incipient signs of the use of active learning methods in the classroom practices, which need to be consolidated. Therefore, the surveyed students stated unequivocally that they worked well under the new curriculum, when:
 - they were working in projects or research (65.5%);
 - the teachers were leading discussions with the whole class (71%);
 - they were working in small groups (71.4%);
 - they were working independently as individuals (71.9%).

As indicated, the above results and the quantitative analysis of students' questionnaires are discussed in section 6.5 of this research report.

Concerning principals' responses, through the first-order factor analysis, the following factors were identified as the main underlying attitudes:

- Factor 1: School restructuring and reculturing
- Factor 2: Mutual support and professional development
- Factor 3: Innovative teaching initiatives
- Factor 4: Leadership

In the process of confirmatory factor analysis, a rotate factor pattern matrix of these four factors on the responses of principals. So, two factors were identified from rotated factor pattern matrix through re-clustering of factors, namely:

- Factor 1: Leadership and capacity building
- Factor 2: Innovative classroom practices

The first order factor analysis conducted on the teachers' responses (variable 24-43) of the questionnaire produced the following five factors:

- Factor 1: Leadership
- Factor 2: Rewarding
- Factor 3: Effective teaching
- Factor 4: Capacity building
- Factor 5: Positive work environment

In the process of confirmatory factor analysis, a rotate factor pattern matrix of these five factors on the responses of teachers was conducted. So, two factors were identified from rotated factor pattern matrix through re-clustering of factors, namely:

- Factor 1: Leadership and rewarding
- Factor 2: Innovative classroom practice and capacity building

With reference to students' responses to the questionnaire after subjection to a first order factor analysis, eight factors were produced:

- F1: Preference for Art subjects
- F2: Mathematics and Natural Sciences perceived as the most important subjects

- F3: Competence of teachers and classroom practices
- F4: Student expectations and self-learning motivation
- F5: Friendly and supportive environment
- F6: Relevance of curriculum to real life and self-learning motivation
- F7: Preference for Moral Education and Social Sciences
- F8: Portuguese and English perceived as the most important subjects

In the process of confirmatory factor analysis, a rotate factor pattern matrix of these eight factors on the responses of the surveyed students was conducted. So, four factors were identified from rotated factor pattern matrix through re-clustering of factors, namely:

- F1: Student attitude to learning activity
- F2: Subject content of the curriculum
- F3: Friendly and supportive school environment
- F4: Relevance of curriculum to real life and self-learning motivation

The discussion of the results of this research present in this chapter is provided in chapter six.

CHAPTER 6

ANALYSIS AND DISCUSSION OF THE RESULTS

6.1 INTRODUCTION

The aim of this chapter is to analyze and discuss the results of the empirical investigation reported in chapter 5. It is divided into nine sections. The first section covers the introduction while the subsequent three sections deal with quantitative analyses. The last three sections deal with the factor analyses. As noted by Stevens (1996) and Stapleton (1997), exploratory factor analysis is used to explore data to determine the number or the nature of factors that account for the co-variation between variables. Confirmatory factor analysis, based on the first factor analysis, specifies which variables will be correlated with which factors, and which factors are correlated. Thus, confirmatory factor analysis provides the researcher with an effective method of evaluating the validity of constructs derived from the first factor analysis. Regarding factor analysis, therefore, for analysis and discussion of the results, the researcher focused on the 2nd generation factor analysis. Both quantitative and factor analyses of the study centred on the analysis and discussion of the results of the principals', teachers' and learners' responses to the research questionnaires and the lessons learned from relevant literature. The seventh section attempts to find common ground between the quantitative analyses and factor analyses. The eighth covers the main findings of the investigations and highlights the significance of the research. The ninth is the summary of the chapter.

Chapter six provides the foundations for chapter seven, which is concerned with the main conclusions, recommendations and implications elicited from the research, harking back to the research questions and theoretical framework.

A. RESULTS OF THE FREQUENCY ANALYSIS

6.2 DISCUSSION OF RESULTS OF THE QUANTITATIVE ANALYSIS OF PRINCIPALS' QUESTIONNAIRES

6.2.1 Academic qualifications of participating principals

As stated earlier in this report, most of the principals working in Sofala province (16 out of 17, i.e. 94.1% of the sample) had a primary education qualification only. By contrast, a large number of participating principals in Maputo City (17 of the 24 respondents or 73.9% of the sample) had a senior secondary qualification.

However, there was no significant difference ($p = 0.990$, $p \geq 0.05$) between male and female participating principals' academic qualifications across the three provinces (see Table 5.5a).

6.2.2 Training in school management

The findings indicate that 40 (32.3%) of the principals who participated in the study attended regular or formal programmed training in school management. Again, 47 (37.9%) of respondents mastered their school management task by training themselves. This applied to the total sample across the three provinces. Finally, 37 (29.8%) respondents received school management training through induction workshops. However, induction workshops were hardly attended in Niassa (only 19.5%).

6.2.3 Extent of principals' experience as school managers

The majority of participating principals had less than 6 years of school management experience, which could indicate a possible instability in the management of the schools concerned. In Sofala this instability was higher compared to the other two provinces. Indeed, 43 of the 78 participating principals with less than 6 years of school management experience worked in Sofala Province.

6.2.4 Attitudes of participating school principals to their leadership role in the process of curriculum implementation

Participating principals' attitudes to their leadership role in the process of curriculum implementation in their schools were summarized in Table 5.10.

Discussion

As noted by Middlewood (2001), participating school principals' statements (see above) showed that they saw their organizational leadership as centred on curriculum or learning, which is the core function of schools, thus confirming the findings of earlier studies concerning the key role of school leadership in the process of implementing curriculum change. This key role of school leadership is emphasized in the theoretical framework (see section 1.6.7).

Ninety-two point eight per cent (92.8%) of participating principals agreed they were developing strong collegialities with teachers, other staff members, students and parents in order to promote student achievement under the new curriculum. With this aim, 87.9% respondents affirmed that they were bringing into operation an action plan produced collectively in school for effective implementation of the new curriculum. Both findings reveal the school leadership role in adopting a system approach to curriculum design or development (see section 2.3.3). The first finding especially shows principals' realisation of the paramount importance of active involvement of teachers, students and parents in curriculum implementation. The second indicates that the democratic participation implied by the system approach to curriculum design or development may only be effective if a common vision is shared and all efforts of school members are channelled accordingly. This common vision is translated into an action plan collectively produced under school leadership.

Effective professional development was assumed by a large majority of participants (88.7%) as critical for successful implementation of the new curriculum. However, only 80.7% stated that they were challenging teachers and students continuously to meet curriculum goals. It is also remarkable that 20.1% implicitly expressed their dissatisfaction with the level of school climate created in their schools in terms of sharing and cooperation on all issues relating to effective implementation of the new curriculum. Strikingly 94.4% of the surveyed principals asserted that they make

efforts to ensure good student performance under the new curriculum, promoting collaboration among teachers through which they develop new skills by sharing professional knowledge regarding the new curriculum. It may mean that there is a gap between efforts made by principals towards sharing and cooperation among teachers in the context of the new curriculum and the effectiveness of those efforts in schools. The research shows that the success of meetings with teachers on the new curriculum introduced by principals is somehow doubtful. This observation is in line with the finding which shows that 15.3% of the surveyed principals indicate that they were not making efforts to ensure good student performance in the context of the new curriculum, nor were they arranging and holding regular and productive meetings on the new curriculum.

Similarly, only 79.9% of the principals involved in the study clearly stated that they were making efforts to promote student achievement in the context of the new curriculum, maximizing the amount of school time used for learning. At the same time, 91.9% of the surveyed principals indicated that they were making efforts to ensure good student performance in the context of the new curriculum through proper coordination and management of the learning process. This major contradiction clearly reflects that reculturing and retiming are difficult to achieve. It is a big concern because other studies had already shown that they make an enormous difference in learning processes. In this regard, Fullan (1998:226) avers that “reculturing and retiming should drive restructuring because we already know that they make a huge difference on learning, although they are very difficult to change.”

The Local Curriculum (school-based local curriculum) should be regarded as an important innovation in the Mozambique New Basic Education Curriculum (see subsection 3.3.5). While 13.7% of the surveyed principals explicitly disagreed that schools under their leadership had developed the local curriculum and started implementation, 16.1% were undecided. This data presumably shows that a significant number of principals ($p = 0.001, p \leq 0.05$, see appendix D2, Table D2a.28) did not understand:

- the pertinence of the local curriculum
- how to design the local curriculum, and
- how to implement it.

This may imply that the instructions given by the Ministry of Education and Culture, through the National Institute for Education Development (INDE) to the principals about development of the local curriculum were not sufficiently clear or were poorly disseminated. This impacted the lack of “*clarity among members about and receptivity to do new goals and role expectations*” that is one of the basic conditions for successful implementation change (see subsection 1.6.1).

The issue of maximizing the amount of school time in Mozambique needs special attention. It is known that the school year comprises only 660 school hours for the schools operating in treble shifts and 835 school hours for the double-shifts schools, while internationally, the school year averages 1 200 school hours¹². If the school year is already shortened from the outset, it is absolutely required that available time be duly rationalised towards optimal fulfilment of changing goals. This point is endorsed by Mingat (2005:114):

(i) time spent in school is a fundamental ingredient for learning (which should encourage some countries to increase this time), and (ii) the productivity of this time can vary greatly depending on how efficiently it is used.

Furthermore, the maximizing of school time is impeded by teachers’ absenteeism. This fact is come out by the following statement:

“Teacher absenteeism is a widespread problem, partly due to inadequacy of management and supervision. Statistical data available on the extent and causes of teacher absenteeism, however, are rare and make the implementation of an effective action program difficult.”
Sedel (2005:45)

In fact, school resocialization should be analyzed in its complex dimensions of *restructuring*, *retiming* and *re-culturing* in the continuous process of curriculum change, which takes time and solid commitment and perseverance (see section 1.6.5).

¹² Data extracted from introduction of the document: Guidance and Obligatory School Tasks (OTEO’s) for the years 2007-2009 produced by the Ministry of Education and Culture under coordination of General Education and Culture Inspectorate Body of Republic of Mozambique.

To sum up, the findings above show that successful implementation of the new curriculum requires strong school leadership, extending teachers' capacity and innovative classroom practice. With a view to meeting these requirements have to be upgraded so that can fulfil their obligations.

6.3 DISCUSSION OF RESULTS OF THE QUANTITATIVE ANALYSIS OF TEACHERS' QUESTIONNAIRES

6.3.1 Academic qualifications of participating teachers

A consistent majority of participating teachers throughout the three participating provinces had a senior secondary education, except that Maputo City led the other two provinces by a distinct overall margin. Out of 35 participants who had a primary education, 28.6%, 31.4% and 40% respectively came from Niassa, Maputo City and Sofala (see Table 5.12).

So, in terms of academic level, we may conclude that the teachers met the requirement in accordance with Mozambican legislation. Nevertheless, it is known that many secondary school graduates do not necessarily have the basic skills and knowledge specified in the national curricula. Moreover, teacher's new role of serving as facilitators of students' learning is highly challenging, even for those who concluded their secondary education with distinction. In this regard, Van den Akker (2003: 68) notes:

The transition from subject matter expert to facilitator of learning creates strongly ambiguous feelings, touching the professional identity of teachers. Student-centred coaching approaches appear to require even more profound disciplinary knowledge and a more flexible pedagogical repertoire in order to provide adequate responses to various conceptions, questions and interests of students.

Indeed, as attested by the above analysis of teachers' attitudes many teachers lack the confidence to stand up to their role in implementing the new curriculum. Therefore, incentives to motivate teachers to enhance and consolidate their academic knowledge on the basis of self-learning and cooperation among colleagues are needed.

6.3.2 Professional qualifications of participating teachers

Professional qualifications of participating teachers varied although they were teaching at the same level. However the largest contingent among them (98 or 44.3%) had IMAP teaching qualifications (see Table 5.16).

Teachers' professional qualifications across the participating provinces vary significantly ($p = 0.028$) as shown by chi-square tests values (Pearson chi-square and Likelihood ratio values were 0.028 and 0.035 respectively) which are less than 0.05, the cut-off value for strategic significance (see Table 5.17).

The variety of pedagogical qualifications held by educators teaching primary education shows how difficult it is to define a coherent and consistent strategy for teachers training in Mozambique. The history of teachers training in Mozambique is mainly and greatly influenced by a Portuguese colonial inheritance and by the world movement towards Education for All (EFA). It is important to realise this fact, with a view to devising a coherent and consistent strategy of teachers training in Mozambique. Briefly, concerning the colonial inheritance it is worth remembering that when Mozambique became independent on 25th June 1975 barely 5% of Mozambican people were literate.

Thus, the Government of independent Mozambique under FRELIMO leadership, following the experiences acquired in "free zones" established during the national liberation struggle, took education as one of the priorities of national reconstruction. Well known are the mottos which were widespread in "free zones" during that time such as "Educar o Homem para vencer a guerra, criar uma sociedade nova e desenvolver a Pátria"¹³, and "Fazer da Escola uma base para o povo tomar o Poder"¹⁴. After National Independence, for instance, the mottos were: "Fazer do país inteiro um lugar onde todos aprendemos e todos ensinamos"¹⁵, "Estudemos e façamos dos nossos conhecimentos um instrumento de libertação do nosso Povo"¹⁶ and "A Educação é tarefa de todos nós"¹⁷.

¹³ Educate the man to win the war, to create a new society and to develop the country

¹⁴ Turn the school into a basis for the people to take over the power

¹⁵ Turn the whole country into a place where all learn and teach

¹⁶ Let us learn and turn our knowledge into a tool for the liberation of our people

¹⁷ Education is task for all of us

On one hand the mottos mentioned above show how FRELIMO always conceived the role of education in the process of political, social and economic development and on the other hand they are indicative of the effort involved in providing mass access to education. Both of these motivating concerns are consistent with the world movement towards EFA. Consequently, the problems posed in the aftermath of Independence, are to some extent still prevalent, except that circumstances have changed. Similar solutions for identical problems may produce different results in different periods. This is a primary consideration informing the strategies for teacher training that have been adopted in Mozambique, especially for primary education.

Effectively, already in the transitional government set up in September of 1974, short teacher training courses of two weeks, one month, three months, et cetera, were organized and delivered for lower primary education. After Independence, courses for primary education were created at the Centres of Teacher Training with a view to improving the professional competence of teachers. These courses known as CFPPs, initially lasted a year and were later extended to a standard period of three years. The entry level for attending these courses was Grade 6 (upper primary level). At the same time, courses were established at the Schools for Training and Teacher Education, known as EFEPs to prepare teachers for upper primary levels (Grades 6 and 7). The admission level for these courses was Grade 8¹⁸. The length of EFEP courses was two years, but with a view to improving professional competence at upper primary level the EFEP's were later replaced by Pedagogic Medium Institutes, known as IMPs. The entrance level was Grade 9 and the duration of the programme was three years.

The Eduardo Mondlane University (UEM) was also involved in the quick delivery of teachers, preparing teachers for upper primary, junior secondary and senior secondary educations. The entry level was Grade 9 and the length of the course was one year for upper primary and two years for junior secondary level training. Meanwhile, for the two year programme of senior secondary training entry level was Grade 11. The teacher training courses offered by UEM were replaced by the programme of the Pedagogic Higher Institute, known as ISP. This institution later became the Pedagogic University, commonly known as UP.

¹⁸ Before introducing the National Education System, the lower primary level comprised Grades 1 to 4, upper primary level Grades 5 and 6, junior secondary Grades 7 to 9 and senior secondary e grades 10 and 11.

It is important to note that among other responsibilities the main task of ISP (later UP) was to prepare teachers for secondary education (Grades 7 to 11, now Grades 8 to 12)¹⁹. The admission level was Grade 11, now Grade 12 and the length of the training course was 5 years, conferring the *Licenciatura* degree.

The National Education Policy, approved in August of 1995, laid down guidelines for the new teacher training courses for primary education. It was intended that this change in teacher training should accompany the transformation of the basic education curriculum: instead of one teacher per subject (like secondary education), two or three teachers are assigned to upper primary education.

Thus, the IMP's were abolished and replaced by the Primary Teaching Institutes, commonly known as IMAP's. These Institutes prepared teachers to deal with Grades 1 to 7, delivering two-year teacher training courses. The admission level was Grade 10. Transitional, IMAPs were operating side by side with CFPPs. It was decided to gradually close these institutions (CFPPs), which were intended to prepare teachers for lower primary teaching (Grades 1 to 5).

However, it should be noted that when the IMAPs and UP were created it seemed reasonable to assume that these institutions would provide sustainable teacher training models for primary and secondary teacher education in Mozambique. Unfortunately, the reality looks different. Why?

To understand the need for alternative teacher training models it is important to note that rapid expansion of the demand for schooling created a need for short training courses, especially for primary education teachers. It is equally important to note that the gradually rising admission level for attending teachers training courses and extending duration of teacher training courses necessitated upgrading of the quality of teaching competence in tandem with a massive expansion of access to schooling. In other words, new courses meant progress in education delivery, ensuring continuous expansion of access accompanied by better teacher training. This successful and progressive movement was seriously undermined by the disastrous

¹⁹ Under the new National Education System lower primary level comprises Grades 1 to 5, upper primary level Grades 6 and 7, junior secondary Grades 8 to 10 and senior secondary, Grades 11 and 12.

16 years of so-called “civil war”, which placed Mozambique among the poorest countries in the world.

Since the peace accord signed in Rome in 1992, Mozambique has made substantial progress in the social, political and economic domains, particularly in education, but this progress is seriously hampered by the capacity problem of providing access to schooling to keep pace the exploding demand for primary and secondary education. The quality of education delivery has become a central issue, and the following is therefore proposed as a possible solution.

Firstly, after the IMAPs had been operating for a year, proposals were made to reduce the length of the training course from two years to one year. We should remember that the trainees were admitted with Grade 10 and were supposed to be prepared to teach Grades 1 to 7. The discussion led to a compromise solution that the courses of one year should only be introduced in the new IMAPs, which were being constructed and not yet functioning. Theoretically those who would have one year of training would benefit from in-service training. But, it did not happen because the conditions were unfavourable.

Secondly, a decision was taken recently to abolish IMAPs and to replace them with Teachers Training Institutes with the aim of preparing teachers for Grades 1 to 7. The academic level of entry is 10th grade and the duration of the training course is one year. The CFPPs courses were definitely closed.

Thirdly, junior secondary training courses of one year were introduced at UP. The current academic admission level is Grade 12.

The last two changes need a much deeper reflection. They were undertaken while the new curriculum of Basic Education was being implemented and the new curriculum for secondary education was to be introduced. Both curriculums are challenging. In this regard Monyokolo and Potenza (1999: 236) aver:

Teachers are in many senses the most important educational resource we have and they will determine whether the new curriculum succeeds

or not. Therefore, the success of the new curriculum depends on the training and support that teachers receive, and their ability to mobilize and manage the resources around them to implement the curriculum.

The advocates of these new courses argued that it was not a new experience for the country. But the short training courses at the beginning of National Independence were attended with great enthusiasm due to the freedom euphoria. In-service training courses were effective and teachers' salaries had not attained to the present level of significances.

Another consideration is that the existing literature does not relate teachers' competency to the length of their training courses. Obviously the duration of training cannot be the only determinant of competence. In this regard, note the following observation by Sedel (2005:40):

...the relationship between the length of the training received and the teacher's competencies is not clear. As Lockheed and Verspoor (1991) pointed out, it is often important to reform the content and quality of training programs and not simply their length.

The researcher agrees that it could be a serious mistake attempting to achieve better training by merely extending the training course at the expense of content: clearly a balance should be found between duration and quality of content rather than effectively equating duration with quality.

Short teacher training may be an option, but only if it is supplemented by effective in-service training, which requires a teachers' support network in the field and the necessary incentives for teachers generally to commit themselves to improving their knowledge collectively and individually towards successful teaching.

In fact, short new courses are inadequate for the purpose of preparing teachers for their professional task. Even when the courses concentrate training in methodology we are facing with the fact that the student teachers' academic background is not sufficient to ensure, for instance, mastery of the content required as primary education teachers for grade 1 to 7 in only one year training. In this regard, Mingat (2005:117) emphasizes that "it is important for teachers to have an academic training

that enables them to fully master the content of the information they are to transmit to the pupils.”

But the real reason for adopting these courses is explained by Mingat (2005:118), who observes that “since short training has lower costs and is more likely to produce the number of teachers necessary to reach the EFA goals, it is quite clearly more cost-effective to operate this way.”

The researcher’s position is slightly at variance with that Mingat (2005) and others as mentioned. Even taking into account the need to be realistic in terms of the affordability of training courses, we cannot opt for alternatives which lead us to solutions of fairly low quality. This kind of solution may seem cost-effective, but becomes unaffordable over time as it makes inroads on effectiveness of the work force.

In-service training cannot be effective without career incentives. Teachers are concerned with the improvement of their living conditions. Short training courses that are not supplemented by in-service training are doomed to failure. These matters are discussed in detail in section 6.3.4.

Obviously, there was a need to redefine the duration of the teachers’ training at UP, which has been done by introducing bachelor’s degrees. The current teacher training strategy, especially for primary education, should therefore be appropriately adjusted.

6.3.3 Teachers from the three participating provinces’ experience of working at upper primary level (EP2)

The majority of the surveyed teachers have only been working at upper primary level for five years or less, which clearly indicates a great instability in the cohort of practising teachers. It was in Sofala where this instability seemed to be higher.

6.3.4 A discussion of the attitudes and beliefs of participating teachers in the investigation

The discussion of the attitudes and beliefs of the teachers who participated in the investigation is based on Table 5.22.

Discussion

Almost half of the teachers (45.3%) expressed explicitly or implicitly that they did not feel intrinsically rewarded for doing their job well in the context of the new curriculum (see table 5.22). These teachers' demand requires special attention from the Education System, Society and Government as a whole. It is a concern that goes beyond the capacity of the Ministry of Education and Culture as the institution in charge of administration of the education system. In this regard Rasool (1999:179), in referring to the South African context, makes a valid point that also bears on the reality of Mozambique:

To move from the present situation to one in which schooling can begin to be transformed in a serious way, requires that the nation at large develops the political will to transcend the evils of the past. All stakeholders face a great challenge in this regard.

In fact, it is argued that a *compatible organizational or social envelope* is a prerequisite for innovative educational change. This, as it was pointed out earlier, includes the establishment of leadership necessary to ensure a shared vision, support, assistance, mastery and motivation, especially commitment and stability for all members. The establishment and use of feedback mechanisms was another factor to overcome barriers to the implementation of changing towards achieving envisaged goals (See subsection 1.6.4).

Teachers' remuneration is a thorny problem for many developing countries, including Mozambique, where financial resources remain a problem, despite considerable economic growth during the last few years in the context of the open market system.

Mingat (2005:120) comments as follows on teachers' remuneration issues which are frequently raised by respondents:

Teachers' salaries should be sufficient to make it possible to recruit and retain adequately qualified teachers who will be happy with their profession. The conditions of the local employment market are an important reference in this respect. If the teachers are too poorly paid (i) recruiting the people needed in terms of quality and quantity may be difficult; (ii) high staff turnover may result, which is not desirable as it jeopardizes the development of a stable teaching body consisting of individuals who build their professional capacities over time; (iii) underpaid teachers may be tempted to pursue another activity and allocate less time to their teaching job; (iv) underpaid teachers may impose (illegally or in a disguised way) school fees on the parents of children in their charge.

Mozambique is no exception and is experiencing similar situation as outlined by Mingat (2005) above. It is becoming quite hard to recruit and retain adequately qualified teachers, especially at primary level. As Mozambique grows economically, new job opportunities and entrepreneurial initiatives are being created, such as banking and insurance services, which require qualified manpower and offer competitive salaries and attractive working conditions. Financial constraints and poor working conditions have understandably resulted in a high staff turnover in the teaching profession which tends to be used as a stepping stone to better paid occupations. Many teachers invest less time in their teaching profession, performing other activities in order to supplement their low salaries towards getting a better life. Corruption is also becoming rife as a means of supplementing low income.

While it is true that the capacity of the government is low to offer teachers better salaries, it is also true that teachers are working under difficult conditions for low salaries that need immediate attention with a view to delivering good education. The initiatives that government is already taking to motivate teachers and help them to be more effective (e.g. loan schemes funded by agreement with financial institutions such as commercial banks), need to be expanded to reach more teachers. Medical aid schemes are another initiative used by government to motivate teachers.

The vast majority (81.9%) of participating teachers stated that they had a sense of belonging to their schools (see Table 5.22). The same percentage confirmed that they worked with colleagues who listened to them if they had ideas about doing better in the context of the new curriculum. They also declared that they treated each other with respect in their schools.

It was notable however, that 33.9% of the teachers did not agree that teaching the new curriculum was fun at their schools (see Table 5.22). Instead, contended that the new curriculum lacked a *compatible organizational or social envelope surrounding the innovation*. This has negative consequences for teachers' motivation, commitment and interest in teaching the new curriculum at their schools. The issue of teachers' remuneration deserved better elaboration and treatment, in which regard Mingat (2005:120) notes that "it is important for teachers to share experiences and remain motivated to actively improve personal practice". In fact teachers' motivation can influence their performance and increase efficiency in their daily careers including implementation of the new curriculum.

Another issue under review was the importance of involving parents or the community as a whole to aid successful implementation of the new curriculum. Again (81% of respondents affirmed that parents' and other stakeholders' involvement was necessary for successful curriculum implementation (see Table 5.22). This finding is confirmed by several researchers. For instance, Steyn (2007:29) asserts that:

Parents and the community should be involved in matters related to school discipline or learner performance, in the utilisation of the education process, and in providing financial support for the school.

Similarly, Mentz and Xaba (2007:47) assert the following:

It is imperative that parents and teachers should be partners in attainment of the objectives of education. Conflict is not a necessity (as Berg and Wallin assert), but is the result of a breach in a relationship- a breach which can and must be repaired. The parent is a participant in the functioning of the school as an organization.

Mentz and Xaba (2007) emphasize an important point regarding involvement of parents and community in school life, advocating a partnership between parents (members of community located around the school) and teachers in pursuing educational goals, to which end parents' and teachers' attitudes and beliefs should change, especially those of teachers who should open doors, allowing parents to become effective participants in the functioning of the school. This procedure may contribute to end the parents' accusation of school inefficiency and to develop an

excellent school atmosphere towards successful implementation of the school curriculum objectives.

According to Table 5.22, about 80% of teachers agreed that their principals facilitated communication effectively and that they had enough opportunities to develop their teaching skills individually and cooperating with colleagues on the new curriculum.

However, only 75.1% of the teachers who participated in the study expressed that their principals were effective instructional leaders and they had enough opportunities to grow professionally in the context of the new curriculum implementation (see Table 5.22). Therefore, it seems that the principals' teaching ability as well as the use of active methods were questioned by the teachers. This attitude may be the result of common problems such as teachers' experience of working with large classes under very poor conditions. Such environments shed doubt on the applicability of active learning methods, which are the core of the new curriculum.

Moreover, teachers' responses revealed misgivings about their capacity to meet the demands of the new curriculum. About 30% of the surveyed teachers gave the impression that they had not been given the necessary support for the implementation of the new curriculum (see Table 5.22).

6.4 DISCUSSION OF RESULTS OF THE QUANTITATIVE ANALYSIS OF STUDENTS' QUESTIONNAIRES

The following discussion of results of the quantitative analysis of students' questionnaires is based on Table 5.25.

Discussion

6.4.1 Students' beliefs regarding school and learning

According to Table 5.25 the majority of respondents (86.4%) affirmed that they liked their schools. Niassa province had an even higher majority (92.9%) who shared this feeling while in Maputo City and Sofala the corresponding figures were (80.4%) and (89.0%) respectively.

Further, 81.3% of participating students reported that they were attending good schools, while only 72.3% agreed that their schools were fun and enjoyable. These opinions were more widespread among participants from the Niassa Province (see Table 5.25).

It is important to note that 73.5% of the students (see Table 5.25) who participated in this research affirmed that they felt safe at their schools while 78.4% affirmed a sense of belonging at their schools. The corresponding figures were higher for Niassa Province.

The school safety might have influenced the level at which the students enjoy the school, both of which (school safety and school enjoyment) seem to be linked to the sense of school ownership. Strikingly, as noted above, a considerable proportion of students affirmed that they liked their schools and rated them as good ones. Ascertaining other students' beliefs and attitudes about school and learning results obtained in this research might help us build the possible connections and therefore an overall picture of the situation.

As it was also the researcher's intention to look at other factors influencing school atmosphere, the relationships between teachers, administrators and office staff when dealing with students at their schools were also investigated. Incidentally, 75.5%, 79.7% and 64.1% of students (see Table 5.25) who participated in this study agreed that their teachers, administrators and office staff treated them with respect. This affirmation was more pronounced in Niassa Province. (see Table 5.25).

This discussion leads us to the concept of school climate. According to Freiberg and Stein (1999: 11)

school climate is about that quality of a school that helps each individual feel personal worth, dignity and importance, while simultaneously helping create a sense of belonging to something beyond ourselves.

In fact, as Freiberg and Stein (1999), a conducive school climate leads a child to love the school and to look forward to being there every day; it nurtures the child's

enthusiasm and therefore the enjoyment of school climate is an essential element of creating a *compatible organizational or social envelope for innovation* as indicated in the theoretical framework (see subsection 1.6.4).

Regarding relationships among students, only 55.9% agreed that other students treated them with respect and 53.5% respected colleagues whose appearance was different from their own (see Table 5.25). Impressively, 82% of the respondents (see Table 5.25) agreed that in their schools they had opportunities to learn about each other. This perception was more pronounced in Niassa.

Looking at student relationships at the schools, we are still concerned with the issue of school climate. At this stage, three aspects were examined in this regard: whether a student felt treated with respect by other students at the school; whether the students respected other students who seemed different from themselves; and whether they had opportunities to learn from and about each other at school. The results of the first two aspects were indicated above and they were almost the same. The low rate recorded for the first two aspects was cause for concern, particularly in contrast with the high rate of the third. Apparently, there is a contradiction. Nevertheless, the following remarks by Hamayer, (2003: 41) should be noted here:

Future work/ living and learning situations will be increasingly characterized by teamwork. Children must be able to adapt to others, to take in the new ideas and transmit them, as well as giving different forms of work-sharing serious thought. They must also at least be able to understand someone else's tasks, so that their own tasks can be carried out efficiently. It also implies that they are prepared to and capable of sharing responsibility.

Similarly Tedesco (1997:65) asserts that:

Teamwork, active solidarity between members of a group and developing the ability to listen are just some of the key elements of this new form of pedagogy, which we should be developing in both theory and practice

Therefore, agreeing with Hamayer (2003) and Tedesco (1997), it appears that there is a strong need to redress the students' relationships among themselves at their schools, particularly in Maputo City and Sofala province, ensuring effective use of

opportunities to learn from each other at school, enabling them to become real citizens of the school. As noted by Freiberg and Stein (1999:11), “when students become citizens of the school, they take responsibility for their actions and those of others.”

With respect to attitude to learning, the overwhelming majority of participants (94.4%), (see Table 5.25) declared that they liked to learn. This opinion was more prominent in Maputo City.

On the same topic of attitude to learning, it is notably that 82.4% of participants overall agreed that doing well at school made them feel good about themselves. Seventy-nine point nine per cent of the students stated that they were doing their best at school. Maputo City rated higher in both categories (see Table 5.25).

Furthermore 81.40% of participants overall agreed that their teachers encouraged them to assess the quality of their own school work, but only 73.9% professed that they did actually assess their own work (see Table 5.25).

Around 73.4% of respondents declared that their teachers were responsible for what they learnt at their schools, but in fact 74.0% avowed that they themselves were mainly responsible for what they learnt at their schools. Both opinions were more prominent among students from Niassa Province (see Table 5.25).

In addition, 74.0% of participants agreed that they had opportunities to learn from each other at their schools. This opinion was more prominent among students from Niassa Province (see Table 5.25).

The results mentioned above are consonant with the preponderance of opinion (77.3%) that they were successful in the school. The stated preponderance was more prominent in Niassa Province (see Table 5.25).

However, concerning the work done at schools, only 60.5% of the respondents agreed that the work at their schools was challenging in context of the new curriculum. Meanwhile, 64.6% of respondents from the three participating provinces

felt challenged at their schools. The corresponding figure for Niassa was higher (see Table 5.25).

From the list of findings mentioned above, the following questions could be posed:

- If 94.4% of the surveyed students stated that they liked to learn (evidenced by 82.4% agreeing that doing well at school made them feel good about themselves), why did only 79.9% of them state that they were doing their best at school?
- Does it make sense that the proportion of respondents who confirmed that teachers were responsible for what students learned was almost the same as the proportion who took the view that students were responsible for their own learning?
- Why did only 60.5% of the students who participated in this study agree that the work at their school was challenging in the scope of the new curriculum?
- How might the fact be justified that only 64.6% of the students from the three provinces who participated in the study felt challenged at their schools?

An attempt to answer these and other pertinent questions leads us to the following concepts: student learning, student learning responsibility, student school work and student learning assessment.

It is beyond the scope of this chapter to discuss these concepts, but a few comments on them as they relate to the pertinent theme are in order:

- It has become generally acceptable to think and speak of the importance of learning within families and schools. More and more, in modern society quality of life is being linked to quality of knowledge in all walks of life. In this regard, Hameyer (2003:37) avers that “quality of life depends on the quality of knowledge and its integration into individual and societal action”, and Malcolm (1999:89) likewise asserts that “the primary purpose of schooling is to prepare students for adult life”. Freiberg (1999:2) also emphasizes the importance of learning:

It is predicted by economists, that education will be the next great global battle ground. The ability of a country to create and

disseminate new knowledge and utilize existing knowledge and intellectual resources will determine the economic and social well-being of a country. A nation's ability to enhance its education systems and schools will be the pathway to this well-being.

- In light of the above it should be noted that 91.3% of participants agreed that what they were taught at school was relevant to real life (see Table 5.25). The large contingent of the students professing that they liked to learn shows students' awareness of the importance of learning.
- But, learning is not a pure desire. Slavin (1989:9) makes the valid point that:

Learning is work. This is not say that learning must be drudgery, but it is certainly the case that students must exert themselves to pay attention, to study, and to conscientiously perform the tasks assigned to them, and must somehow be motivated to do these things. This motivation may come from intrinsic interest value of the material being learned, or it may be created through the use of extrinsic incentives, such as praise, grades, stars, and so on.

Thus, student learning can be seen as an active and enjoyable commitment of the student in the process of acquiring knowledge and skills grounded on prior skills or information; hence it is characterized (*cf.* Schubert 2005) as being *incremental and developmental*, requiring motivation, active study, perseverance, and obviously the necessary support, especially from teachers, colleagues and parents.

Clarifying the learning concept above and focusing on the classroom situation, Slavin (1989:6) avers that:

“...effective instruction is not just good teaching. No matter how high the quality of instruction, students will not learn a lesson if they lack the necessary prior skills or information, if they lack the motivation, or if they lack the time needed to learn the lesson.”

It follows, therefore, that teachers must be thoroughly aware of learners' background knowledge in order to teach any lesson successfully. Bernhardt (1999:64) notes in this regard that:

when standards are known, teachers can design a continuum of learning for students, articulate curriculum across grade levels and age groups, ensure basic skills attainment for all students, and ensure coverage of curriculum frameworks.

Who really is responsible for what the students are supposed to learn at school? The following remark by Slavin (1989:5) is apposite:

Ability to understand instruction and perseverance are partly under the control of the teacher, but partly characteristic of students. For example, ability to understand instruction is partly a product of student ability, but also a product of what teachers do to make sure that students have all the prerequisite skills and information they will need to successfully learn a new lesson. Perseverance results both from the motivation to learn that a student brings to school and from specific strategies a teacher or school might use to motivate students to do their best.

Therefore, the finding of the study is coherent: the equal numbers declaring that teachers are responsible for what students learn and that students themselves are responsible for what they learn are not contradictory but complementary propositions.

According to Slavin (1988:4-6), the level of challenge as perceived by students can be explained at school level (macrolevel) as well as at classroom level (microlevel):

- At school level, the challenge resides in how principals and/ or central administrators fulfil the school leadership role in context with curriculum implementation (e.g. establishment of policies concerning grouping of students, provision and allocation of special education including remedial resources, monitoring of classroom practices, collaboration with parents and other stakeholders).
- At classroom level, the challenge consists in using the four elements as described below to achieve effective instruction:
 - *Quality of instruction:* The degree to which information or skills are presented so that the students can easily learn them: largely a product of the quality of the curriculum and lesson presentation itself.

- *Appropriate levels of instruction:* The degree to which the teacher makes sure that students are ready to learn a new lesson (that is, they have the necessary skills and knowledge to learn it) but have not already learnt the lesson.
- *Incentive:* The degree to which the teacher makes sure that the students are motivated to work on the instructional tasks and to learn the materials being presented.
- *Time:* The degree to which the students are given enough time to learn the materials being taught.

In this regard, careful analysis of the above factors reveals four basic conditions for successful curriculum implementation, which is consonant with the theoretical framework, namely:

- Compatible organizational or social envelope for innovation;
- Deliberate process of role **resocialization**; and considerable
- Time, coordination, support, and encouragement; as well as
- School leadership in assuring the presence and maintenance of these conditions

(see section 1.6 in the introduction to the thesis).

If on the one hand barely 60.5% of the students who participated in this study agreed that the work at their schools was challenging in terms of the new curriculum and on the other hand only 64.6% of the students from the three provinces who participated in the study felt challenged at their schools, it can be concluded that not enough was done in terms of implementing of the new curriculum and that considerable effort is required to meet the basic conditions and requirements referred to above (see Table 5.25).

Regarding relevance of the content of the new curriculum, it was remarkable that an overwhelming majority of the participants (91.3%) agreed that they found what they learnt in their schools relevant to real life (see Table 5.25). Moreover, there was no

significant difference $p = 0.062$ between provinces regarding the opinions of the students about school learning relevancy to real life situations (see Appendix F2, Table F2.30).

On one hand, 83.5% of the students agreed that they understood how to apply to real life situations what they learned at school in the context of the new curriculum. On the other hand, 78.4% of the students who participated in this research expressed a favorable opinion about the usefulness of participation in extracurricular activities (see Table 5.25).

As noted, the findings regarding learning relevancy justify to some extent why the majority of the students indicated that they liked to learn and liked their schools, and also considered effective learning a significant motivating factor for themselves. Good and Brophy (1989:32) aptly remark that:

Student will not be motivated to learn if presented with pointless or meaningless activities. Activities should be selected with worthwhile academic objectives in mind. That is, they should teach some knowledge or skill that is worth learning either in its own right or as step toward some higher objective.

Thus, Good and Brophy (1989:32) emphasize that they should avoid pointless or meaningless activities, such as:

- continuous practice of skills that have already been mastered thoroughly;
- memorizing lists for no good reason;
- looking up and copying definitions of terms that are never used in readings or assignments; or
- reading material that has not been presented in enough detail or integrated well enough to allow students to understand it.

Assuming from the research that the new curriculum is regarded by the students as relevant, the huge challenge is to implement it effectively.

In connection with participation in extracurricular activities, 8.6% of respondents did not consider such activities important while 12.9% were undecided (see Table 5.25).

Therefore, it seems that there is a need to revise extracurricular activities to fit in with the new curriculum and to gain an overall picture of students' involvement in such activities with a view to adopting measures that are calculated to persuade those who are undecided, or who do not see the usefulness of the activities, to change their opinions.

6.4.2 Students' opinions about their teachers in the context of the new curriculum implementation

Eighty-one point seven per cent (81.7%) of respondents felt that their teachers expect from them to do their best. The corresponding response was higher in Niassa than in its counterparts (Sofala and Maputo City). This rate is slightly lower when responses are individualised. Thus, only 79.9% of the students individually confirmed awareness that teachers expect them their best. Maputo City stood out above their counter parts when the responses were individualized for students. In all cases these students' opinions concerning their school performance correlate with their attitude to learning (see above).

Aligning with students' opinions concerning their school performance, 78.6% of the student participants agreed that their teachers helped them to gain confidence in their ability to learn. It was surprising that students did not consider the fact that teachers helped them to gain confidence in their ability to learn as an indication that teachers themselves had confidence in their ability to learn. In fact, only 66.1% of participants confirmed their realisation that teachers had confidence in individual students' ability to learn while 71.3% agreed that their teachers were paying individual attention to them when needed.

Linked to these students' opinions regarding their teachers' attitude, other interesting findings were recorded:

- Only 68.8% agreed that their teachers listened to them individually.
- Only 65.5% agreed that teachers understood the personal problems confided to them by students.
- Only 66.5% agreed that their teachers knew each of them well.
- Only 59.8% agreed that their teachers cared about all of them individually.

There is a discrepancy between the fact that teachers expect students to perform well, yet teachers do not actively promote achievement of that goal.

The results show that the proportion of respondents from Niassa who agreed that teachers helped students to gain confidence in their ability to learn and had confidence in individual students' ability to learn, and that teachers attended to individual students when it was needed, was higher in that province than in its counterparts.

Similarly, most students in Niassa province stated that their teachers understood them when they had personal problems, knew each one of them well and also cared about each one of them, while in Sofala more respondents than in its counterparts affirmed that teachers accepted and entertained individual students' ideas.

The findings concerning students' opinions about their teachers in the context of the new curriculum reveal the degree of *positive teachers' expectation* translated into teachers' belief that their students can learn and consequently they expect from them to do their best at the school (*cf.* Good and Brophy, 1989). The findings also show the level of students' learning *supportive environment* expressed in opportunities to learn and to receive appropriate encouragement and support for their learning efforts at school, especially from teachers.

Therefore, as noted by Good and Brophy (1989:36), "teachers monitor each students' progress and provide feedback and remedial instruction as needed, making sure that material is mastered".

Looking at the results of the study, we may conclude that considerable effort will be required to ensure successful implementation of the new curriculum. This requirement upholds the second basic condition incorporated in the theoretical framework, namely *member's ability to enact the new role expectations* (see subsection 1.6.2). This is a big challenge, especially in urban schools, for example, in Maputo City and in Beira in Sofala Province, where class sizes at the upper primary level reach an average of more than 60 students. It is important to note that each

teacher should manage at least four classes, depending on the subject he/she teaches.

Obviously, as noted by Mingat (2005:123) “*the question of class size is often controversial and hotly debated.*” However, although there is no clear consensus on the relationship between class size and quality of education, in many countries of sub-Saharan Africa, as in the case of Mozambique, there are situations where the number of students in the class is so large that instruction of a high quality is hardly possible (cf. Michaelowa, 2003).

The first principle is stated by Bernhardt (1999:62):

A true learning organization will understand its student population. It will know who the students are ethnically, socially, emotionally what they value and believe, how they like school and learning, and what the impacts of current processes are on their learning.

Previously, Tedesco (1997:16) argued that:

Discussing the purposes of education regardless of operational considerations would be not only sterile from the point of view of action, but also abstract and infertile from a theoretical point of view.

Thus, a feasible strategic plan in each school is needed to meet the challenges of implementing the new curriculum, to which end a “clarity among members about and receptivity to do new goals and role expectations and members’ ability to enact the new role expectations”, should be cultivated as noted earlier (see subsection 1.6.1)

The majority of respondents (86.3%) agreed that their teachers are excited about the subjects they teach (see Table 5.25). This could be the reason why students indicated that they liked school and considered that they were attending good schools. This view was represented by a higher proportion of students from Niassa than those from other two participating provinces.

Around 72.3% of students overall considered that their schools were fun and enjoyable. This figure varied slightly (74.8%) for students who agreed that their teachers made learning activities fun and enjoyable (see Table 5.25). Niassa

Province led the other two provinces in the proportion of respondents who endorsed this view (i.e. that teachers made learning fun and enjoyable).

These findings clearly have a bearing on the *supportive learning environment* endorsed by teachers who agreed with students' perception. Good and Brophy (1989:36) note in this regard:

Despite their strong academic focus, teachers who elicit good achievement gain, maintain pleasant, friendly classrooms and are perceived as enthusiastic, supportive instructors.

This study therefore shows that there is a need to revise teachers' classroom practices. This opinion is in line with the argument put forward by Bernhardt (1999:61):

until teachers are able to predict the impact of their actions on students, change their actions based on these predictions, corroborate the effect of their actions with students, and work with peers to build a comprehensive learning organization, any increase in student achievement and change in the classroom will be temporary.

6.4.3 Students' opinions about preparing themselves for life in the real world by learning in the context of the new curriculum

The overwhelming majority of participating students participating expressed the conviction that they were learning for the real world in the context of the new curriculum, to which end they considered reading (91.6%) and writing (90.6%) to be pivotal accomplishments. On the one hand, 87.9% agreed that the new curriculum would contribute to their education for the real world, enabling them to deal better with issues requiring knowledge of Mathematics as applied in the real world of practicalities. On the other hand 81.8% of the students confirmed that the new curriculum would contribute to their education in the specific sense of enabling them to present information (see Table 5.25).

Only 72.2% of participating students agreed that the new curriculum would contribute positively to their education for the real world by enabling them to cope with new technology. This view was endorsed by respondents from Niassa than from the other two participating provinces (see Table 5.25).

These findings reflect participating students' perception of the new curriculum. As noted in the discussion of the curriculum concept, the implemented curriculum as seen by users is definitive for how the curriculum is seen, understood or interpreted (see Chapter 2, section 2.2).

These results of the study show, to some extent, how the implementation of the new curriculum of basic education in Mozambique meets the essential knowledge requirements of primary education, namely writing, reading, arithmetic, communication and technology. They indicate that reading and writing are perceived as accomplishments to be mastered by every student. Regarding mathematics and communication in general (information presentation), there is a need to adopt strategies to improve students' motivation and mastery of these accomplishments.

Concerning technology the findings correspond closely to the expectations in the context of implementing the new basic curriculum. It is important to recall that:

- technology in the context of this curriculum includes arts and crafts; and
- the main objective of the new curriculum is to develop not only knowledge, but skills and values in an integrated and interdisciplinary way (See section 1.5).

Hameyer (2003:40) notes in this regard:

“Problem solving capacity, ability to interact socially, readiness to share responsibility, learning how to learn, knowledge about how to decide, analytical abilities, and intellectual curiosity are the key qualifications required to be taught in schools”.

In similar vein Parker and Harley (1999:183) observe that “globalization generates a demand for citizens who are economically competitive, multiskilled, flexible, and performative.” In order to meet these demands as required by the new curriculum, the technology of knowing- how- to- do and how to convey as well as present information should be cultivated.

6.4.4 Students' opinions about time use in their classes in the context of the new curriculum

The results obtained regarding students' opinions about time use in their classes in the context of the new curriculum revealed that a variety of strategies were applied in classroom practices. Some strategies were used more frequently than others. For instance, analyzing individual or class performance (60.8%), reading (63.5%), working in small groups (69.7%) and answering questions from a book or worksheet (71.5%). The strategies claimed to be infrequently used in teaching the new curriculum were whole-class discussions with the teachers (50.1%) and listening to teachers' talk (50.9%).

These findings are consistent with efforts towards moderation and variation in strategy use in classroom practice required in the context of implementing the new curriculum. This setting is supported by the assertion by Good and Brophy (1989: 25) that "no single model is appropriate for all situations. What constitutes effective instruction varies with the subject matter, students, and other factors."

6.4.5 Effective learning methods for students

Similarly, the findings concerning students' opinions about learning methods that they found to be effective suggest that the best solution for them was a combination of learning strategies, hence the low rate of support for individual learning methods used by individual students. The following learning methods were identified as being effective: working on projects or research (65.5%), discussion with the whole class led by the teacher (71.0%), working in small groups (71.4%) and individual work (71.9%).

Regarding the projects or research method, which is an activity-based inquiry, only a few students indicated it as an effective learning method compared to other methods like discussion with the whole class led by the teacher, working in small groups, and individual work. Incidentally, the projects or research method has been emphasized as important by other scholars, such as Hameyer (2003:32) who noted that:

A considerable number of practitioners and theorists are convinced that basic domains of school knowledge can be more easily acquired

by activity-based inquiry than other learning methods. ...inquiring enriches instructional work and increases the students' motivation.

One of the reasons for the disparity in results could be that the activity-based inquiry methods introduced by the new curriculum represent a critical departure from the habitual learning methods used to date at most schools, especially at upper primary level.

It is impressive that working in small groups and individual work gained more preference from the students. Slavin (1989) classifies work in small groups as cooperative learning with the aim of helping one another learn academic content. However, Slavin (1989:130) calls attention to the fact that:

...other reviewers have concluded that cooperative learning does not always enhance student achievement, but that positive achievement effects depend on the practice of two factors: group goals²⁰ and individual accountability²¹.

Therefore, the way the work group is organized and assessed may or may not contribute towards motivating student learning, and therefore, to enhanced student achievement.

Regarding individual work (independent learning), Van den Akker (2003:61) argues that "a major restructuring strongly emphasizing the need for more independent learning and asking for a radical shift of traditional classroom pedagogy."

For the researcher independent learning is a basic method for the successful use of any learning strategy, especially for group work when it provides the necessary preparation for active participation, raising questions or doubts and in short, contributing positively.

In fact, working on projects or research, whole-class discussions led by the teacher, working in small groups, and individual work should be seen in the light of the new role allocated to teachers as guides to information sources, rather than as sources of

²⁰ Group goals: rewards given to groups in accordance with performance of the group or of its members.

²¹ Individual accountability: the contribution of group member's is identifiable.

information; as facilitators of learning rather than as transmitters of knowledge. Therefore, the students should take a great responsibility of their learning.

6.4.6 Students' opinion about the relative importance of subjects and their preference for relevant textbooks in the context of implementing the new curriculum

The surveyed students expressed a clear preference for Portuguese as a subject and respective textbook in the order of 94.9% and 93.2%, respectively (see Table 5.25). This attitude, as discussed earlier, is in keeping with students' affirmation that the new curriculum will contribute to their education in the sense of promoting their ability to: read (91.8%), write (90.6%) and present information (81.8%).

Mathematics was rated the second most important subject by the vast majority (92.4%) of participating students, while 88.7% of the students overall confirmed an overriding preference for the Mathematics textbook, which is particularly significant considering that 87.9% of these respondents agreed that the new curriculum would contribute to their education for the particular reason that it would improve their mathematical skills. These findings are a reflection of students on their expectation that the new curriculum would enable them to deal better with issues requiring knowledge of Mathematics in the real world of practicalities (see Table 5.25).

Natural Sciences held the third position in the order of importance as indicated by 87.3% of the students. The relevant textbook was preferred by a considerable percentage of the students (85.1%). Fourth on the list, Moral and Civic Education was considered an important subject by 80% of the students. The relevant textbook was preferred by a good percentage of the students (78%). Strong majority of students (77.9%) attributed special importance to Physical Education and a commensurate preference (77.9%) the associated textbook. Physical Education held the fifth position in order of importance attributed by the students (see Table 5.25).

Sixth in order of attributed importance was English (77.2%). More or less the same percentage (77.3%) stated that the English textbook is one of their preferences. For the seventh position a good percentage of the students (76.8%) indicated Social Sciences and 74.4% of the students preferred the associated textbooks. Around 70.6% of the students stated that Music Education was an important subject, holding

the eighth position in order of attributed importance. The relevant textbook was preferred by 70.2% of the students (see Table 5.25).

Visual/Aesthetic Education was ninth in order of attributed importance (69.4%), borne out by a preference for the relevant textbook expressed by 68.5%. Tenth in line was Crafts/Arts (66%) with a textbook preference expressed by 62.5%. Finally, in the eleventh position in terms of importance, according to the students, a relatively small percentage (46.9%) attributed special importance to and a corresponding preference (43.9%) for the related textbook (see Table 5.25).

The findings above call for comment as follows:

- Regarding subject preference, the four elements of effective instruction (see above) namely *quality of instruction*, *appropriate levels of instruction*, *incentive* and *time* play an important role, influencing students' choice of subjects. So, the way teachers function as guides to information sources or as facilitators of learning, is critical. Steyn (2007:28) confirms:

Apart from different abilities, attitudes and interests, learner characteristics represent a wide range of cultures, languages, religions and socio-economic backgrounds. Learners also have different educational needs.

Good and Broophy (1989:26) endorse further:

It is difficult to create lessons that are effective for all the students in a class or group, because students differ in ability, reading level, possession of relevant background information and vocabulary, content interests, and preferences for different types of lessons and assignments. Often it will be necessary to supplement group lessons with enrichment assignments for some students and remedial work with others.

- Concerning textbook preference, the findings show that the level of choice is close to the degree of subject preference. However, the textbook preference may be linked to textbook quality in terms of structure, illustration, clear specification of lesson objectives, allowance made for students' background knowledge, and adequacy of content in an appropriate language, et cetera.

- A brief comment on local language and associated textbook in Grade 6 is apposite. It appears that local language is being introduced gradually and the materials used are still at the piloting stage and relatively scarce.
- The results of inquiry concerning subject and textbook preferences at upper primary level bear out the view that some subjects (e.g. Local language, Crafts/ Arts, Visual/ Aesthetic Education, Music Education) should either not be taught at upper primary level or should be taught without using formal textbooks. The main argument for this position is the high cost to Government of purchasing textbooks, since the Basic education is free of charge in Mozambique.

The researcher must deviate from the above position for the following reasons:

- We are living in a globalization era that requires multiskilled citizens.
- Textbooks are essential resources for curriculum implementation. Mingat (2005:126) emphasizes that “in general, empirical studies highlight textbooks as a variable with a high cost-effectiveness ratio for improving learning.”

The researcher must therefore, agree with Monyokolo and Potenza (1999:243) that “in order for the new curriculum to be successfully implemented, every learner should receive a textbook for each learning programme under study.”

Mingat (2005:126) endorses this view as follows:

Around 15 years ago it was thought that in situations with limited resources, one textbook for two students would be a reasonable compromise. More recent empirical studies suggest that it is important for all students to have textbooks.

In fact, the textbooks will help teachers (provided quality requirements are met) to fulfill their role effectively as guides to information sources or as facilitators of learning. Mingat (2005:126) aptly observes: “When all of the students have textbooks, the teaching approach can change and the teacher can use the book as support material, both for the lessons and for the students’ individual work.”

That it is to say, in a situation where textbooks are not available for all students, teachers will be inclined to remain the exclusive source of information or content transmitter, placing students in a position where they become passive receptacles of knowledge. This attitude based on a misconception about learning behaviour should change in order to enable student-centered learning as emphasized in the new curriculum.

Obviously, appropriate use of textbooks requires good preparation by teachers. As noted by Mingat (2005:135): “the resources are only means that create a context that is more or less favorable for learning. They are not the learning itself.” In this case, the textbooks are intended to enable student-centered learning, to which end have to assume the role of a guide or facilitator.

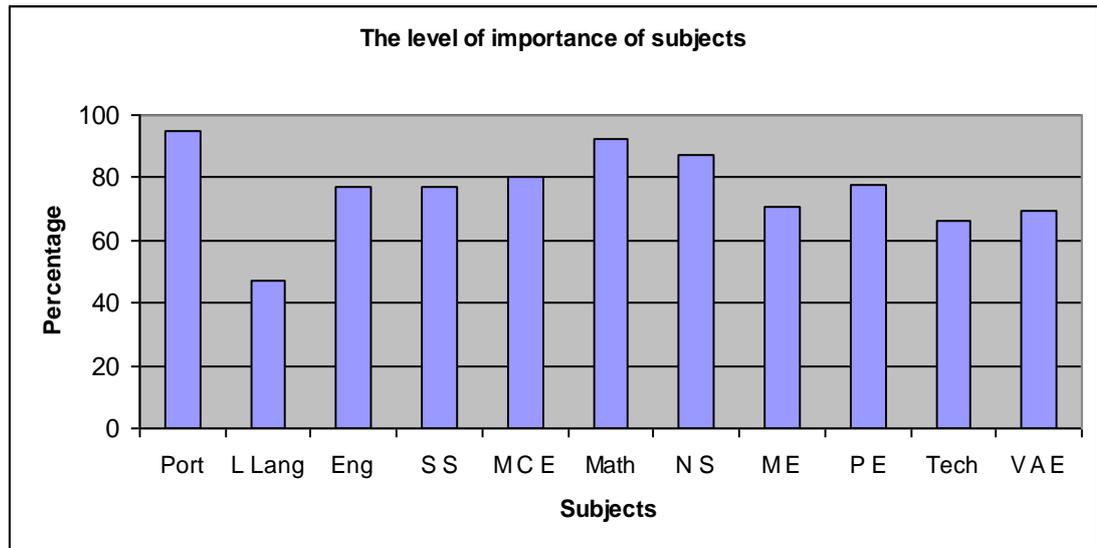
Students’ opinions about the relative importance of subjects and their concomitant preference for the related textbooks in the context of implementing the new curriculum are reflected in Figures 6.1 and 6.2.

6.4.7 Participating students’ reading of books other than textbooks

It was remarkable that an overwhelming majority of participating students (91.4%) agreed that they read books other than their school textbooks. This extended reading range was found to be most prevalent among Maputo City’s students compared to Sofala and Niassa (see Table 5.25).

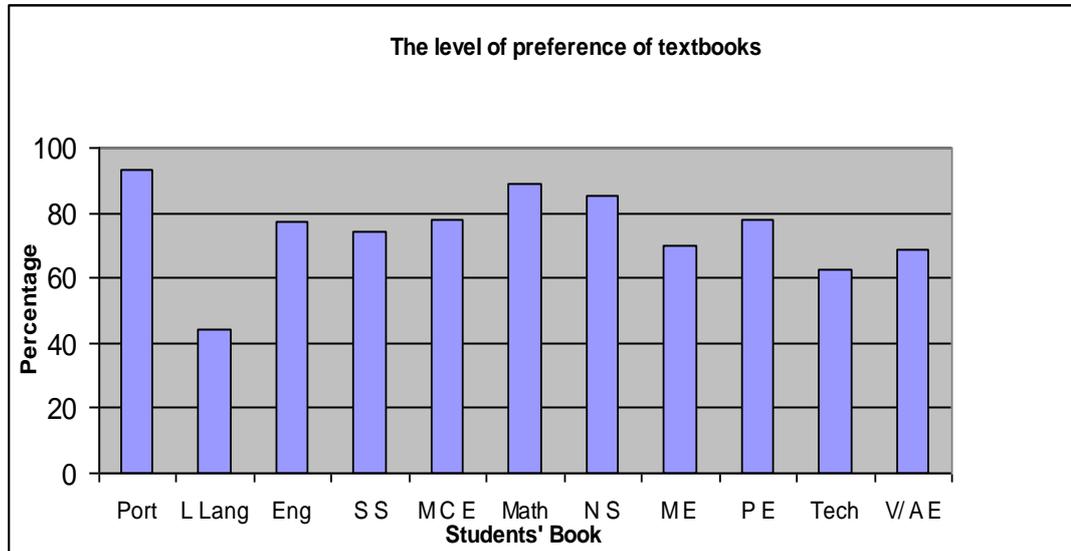
To control the above findings, the students were required to state as well whether they did not read books other than their school textbooks. Notably, 22.5% responded in the affirmative. Nevertheless, even if a margin of error is allowed in their responses, it became obvious that most of the respondents do read books other than their textbooks. The lowest affirmative response came from Niassa respondents.

Figure 6.1: Bar chart reflecting students' attribution of relative importance to subjects taught in the context of implementing the new Curriculum



Port- Portuguese; L Lang- Local Language; Eng- English; SS- Social Sciences; M and CE- Moral and Civic Education; Math- Mathematics; NS- Natural Sciences; ME-Musical Education; PE- Physical Education, Tech-Technology; V/AE- Visual/ Aesthetic Education

Figure 6.2: Bar chart reflecting students' expressed preference for textbooks used in the context of implementing the new Curriculum



Port- Portuguese; L Lang- Local Language; Eng- English; SS- Social Sciences; MCE- Moral and Civic Education; Math- Mathematics; NS- Natural Sciences; ME-Musical Education; PE- Physical Education, Tech-Technology; V/AE- Visual/ Aesthetic Education

6.4.8 Students' perceptions of learning outcomes in the context of implementing the new curriculum

According to Deacon and Parker (1999) an outcome can be described as a "demonstrated ability". Malcolm (1999:91) similarly describes it as follows:

Outcomes must be demonstrations or performances, not thoughts, understandings, beliefs, attitudes, mental processes, not grades, numbers, averages.

Malcolm (1999) holds briefly and more precisely that an outcome is sometimes similar to *behaviour*. This concept is in a wide sense also associated with the effectiveness of education as Steyn (2007:30-31) clarifies:

The effectiveness of education can properly be indicated by how well school leavers are prepared for further education and training or by how well school leavers are prepared to engage their skills to meet entrepreneurial opportunities that present themselves, even in the most rural and remote areas of developing nations. The effective education system should prepare learners for job creation and / or job placement.

Indeed, *outcome is the effect or result of an action or event*²². In the present context, therefore, outcomes devised for students can be seen as the effect or result of learning. In this context, outcome is linked to success as *the achievement of a desired aim*.²³ Thus, student success at school may be understood as the achievement attained in the process of learning.

In view of the above, it was justifiable for this study to analyze the achievements of students and their learning outcomes in the new curriculum. However, the measuring of students' outcomes, in a wide sense, would require a reasonable period of learning practice, among other aspects. As Bernhardt (1999:61-62) points out:

It is often stated in the literature that it takes about five years from the time a school starts to rebuild for increased student achievement to the time it will see sustainable increases in student achievement directly attributable to school improvement efforts. This time may be decreased if the entire school is committed to the school improvement effort and

²² Definition extracted from Oxford Advanced Learner's Dictionary of Current English, fifth edition, edited in 1995 by Jonathan Crowther, Oxford University Press.

²³ Definition extracted from the same Dictionary indicated at footnote 1.

understands the following at the school level and at the individual teacher level:

Who the school's clients are, and how they learn best
The impact of current processes on all student learning
What the school community expects students to know and be able to do.

The current study intended to analyze the efforts in progress towards rendering student learning effective by ensuring effective implementation of the new curriculum (see Research Questions, section 1.4).

Many aspects of efforts to promote students' achievement have been analyzed in the discussion of other items above, especially *students' beliefs: attitudes about school and learning*.

So, at this stage, with the outcome concept in mind, the analysis of students' outcomes centred on their perception of learning in the context of the new curriculum, assuming that this perception may exert a significant influence on their behaviour. Incidentally, Good and Brophy (1989:33-34) have also observed that "students' reactions to their own performance will depend not so much on their absolute levels of success but on their perceptions of what they have achieved."

Consequently, it was considered that students should take more responsibility for their own learning with teachers serving as guides or facilitators. It is appropriate, therefore, to consider students' opinions on their performance in order to draw important lessons as evidenced below:

- The majority of students (82.4%) who participated in the study confirmed that doing well in school makes them feel good about themselves. Students from Maputo city rated higher (85%) compared to Niassa (82.1%) and Sofala (81.1%) (see Table 5.25). Section 6.5.2 showed that 81.7% of the students agreed that their teachers expected them to do their best. It seems, therefore, that these findings reflect the high expectations of schools as relayed to students, especially by teachers. In effect, the findings under discussion show that the surveyed students were aware of a strong relationship between learning efforts required from them and achievements resulting from their

effort as a personal reward that is highly regarded by their teachers, parents and all the interested parties.

- Similarly, the results showed that 79.9% of the surveyed students (see Table 5.25) agreed that they were doing their best at school, and that students from Maputo City consistently rated higher than other participating provinces. This finding not only reveals the individual efforts of students or commitment to learning activity, but also the level and effectiveness of guidance and support they receive, especially from their teachers and families.
- Finally, 77.3% of participating students (see Table 5.25) in the study indicated that they felt successful at school. The highest rate of agreement on this matter was scored by Niassa (81.7%), followed by Sofala (76.5%) and lastly by Maputo City (76.3%). Normally students attribute their success to school achievements, translated into good results, especially in tests. The Mozambican situation in this regard is not far removed from the reality of other learning contexts, from which important lessons can be drawn. O’Leary (2008: 109) notes the following in this regard:

Among the problems they found in reports from countries such as Belgium, Canada, England and France were making that failed to offer guidance for improvement, poorly defined criteria to support judgements, tests that encourage rote learning, use of approaches where pupils are compared to one another, a focus on filling records than analyzing pupils’ work, a lack of attention to the assessment records or practices of other teachers in the same school, little engagement in critique of what is assessed or the methods used.

In view of these and other findings discussed above, it follows that considerable effort will be required to translate what students consider as an achievement into learning performance if they are to regulate their own learning. Good and Brophy (1989:33) contend that;

“...teachers need to encourage students to develop the following perceptions and attributional inferences concerning their performance at school if students are to come to regulate their own learning: effort-outcome covariation²⁴, internal locus of control²⁵, concept of self as

²⁴ Students need to recognize that there is a predictable relationship between the level of effort they invest in a task and the level of success they can expect (Cooper, 1979).

origin rather than pawn²⁶, sense of efficacy or competence²⁷ and incremental concept of ability²⁸.”

The quotation above highlights the new role of teachers as facilitators of students' learning. In light of this, it brings to our attention the main change that should be operated in our schools towards effective implementation of the new curriculum. While this is the case, it should be clear that there is a hard task ahead to achieve the goals of the new curriculum, as it requires time and patience. Van den Akker (2003:68) points out that:

the transition from subject matter expert to facilitator of learning creates strongly ambiguous feelings, touching the professional identity of teachers. Student-centred coaching approaches appear to require even more profound disciplinary knowledge and a more flexible pedagogical repertoire in order to provide adequate responses to various conceptions, questions and interests of students.

The teachers' challenge is to ensure that the students become active subjects in the teaching-learning process and that all of them achieve measurable learning outcomes. In other words, as Mahomed (1999: 164-165) points out,

“...the challenge of teaching in the context of the problems we have has to be met in innovative and creative ways of teaching and learning. These should enable teachers to respond to the varied needs of learners and conditions which exist.”

B. RESULTS OF SECOND-GENERATION FACTOR ANALYSIS

6.5 DISCUSSION OF RESULTS ANALYZING PRINCIPALS' RESPONSES

The factor analysis that was applied to the responses of principals on the implementation of the new basic education curriculum in Mozambique revealed the following two factors:

²⁵ Students should believe that they can from performing achieve success on their own initiative, at least to some extent, rather than believing that their performance is determined by external factors that they cannot control (Stipek and Weiss, 1981)

²⁶ Students needs to recognize that they can bring about desired outcomes through their own actions (De Charms, 1976)

²⁷ Students must believe that they have the ability to succeed on a task if they choose to invest the necessary effort (Weisz and Cameron, 1985).

²⁸ Students should see academic ability as a potential that is developed continually through learning rather than a fixed capacity that predetermines and limits what can be accomplished.

- Leadership and capacity building
- Innovative classroom practice

This result basically coincides with that obtained through quantitative analysis of principals' responses. It shows the importance of school leadership, capacity building and innovative classroom practice as a means towards successful implementation of the new curriculum. Pertinent comments were made during the discussion on quantitative results of principals' questionnaire. Additional remarks are presented in 6.7 below. Nevertheless, it is worth noting that in terms of leadership and capacity building in the context of implementing the new curriculum implementation, the principals' responses to the survey linked with the present research:

- Promoting collaboration among teachers through which they were developing new skills by sharing professional knowledge relating to the new curriculum (94.4%, V16)
- Close relationships with teachers, other staff members, students and parents (92.8%, V10)
- Coordinating and managing the learning process in context with implementing the new curriculum (91.9%, V17)
- Effective professional development programme for implementing the new curriculum (88.7%, V12);
- Operation of an action plan produced collectively in school for effective implementation of the new curriculum (87.9%, V11);
- Undertaking regular and productive staff meetings on implementing the new curriculum (84.6%, V14);
- Challenging teachers and students continuously to meet curriculum goals (80.7%, V13).

Concerning innovative classroom practice for successful curriculum change, the participating principals asserted the relevance of:

- Teachers' use of a variety of active methods in classroom practice as required by the new curriculum (92.7%, V22);

- Considerable efforts made by teachers to observe interdisciplinarity principle in the lesson plans drawn up in context with implementing the new curriculum (92%, V20);

These findings highlight the key issues involved in preparing Mozambican principals to meet the obligations of their school leadership role in the context of implementing curriculum change, starting from school resocialization in its complex three dimensions: restructuring, reculturing and retiming (see section 1.6.5). Furthermore, the findings indicate that principals should spend at least equal amount of time on curriculum leadership tasks and school administration. The Mozambique experience shows that principals in that and many other countries of the world are inclined to spend more time on administrative tasks than on pedagogical issues. In this regard, Marsh and Wills (1999:198) observe:

School principals should spend as much time concentrating on pedagogical tasks (providing leadership, support, instruction) as they do on administrative tasks (answering inquires from the public, writing letters, filling out forms, making financial decisions). However, various studies indicate that school principals do not spend equal time on these two areas; instead, they spend far more time on administrative tasks.

The problem articulated in the above quotation implies also the school resocialization (see above).

6.6 DISCUSSION OF THE RESULTS OF FACTOR ANALYSIS OF TEACHERS' RESPONSES

The analysis applied to teachers' responses concerning implementation of the new basic education curriculum in Mozambique revealed the following two factors:

- Leadership and rewarding
- Innovative classroom practice and capacity building

Throughout the discussion of the quantitative results of teachers' questionnaires, both factors were highlighted and analyzed in some detail. However, it is worthy to stress the relevant role of school leadership in creating a conducive environment, that enables true sharing of the decision-making process; community participation; better use of government support or of external contribution; putting in place a

common agreed plan; adequate support to members; and provision of resources by a process that is secured by effective ability of communication, all in accordance with the theoretical framework.

Effective school leadership must promote students' learning without fail. Monyokolo and Potenza (1999:236) support this argument, observing that:

“Teachers are in many senses the most important educational resource we have and they will determine whether the new curriculum succeeds or not. Therefore, the success of the new curriculum depends on the training and support that teachers receive, and their ability to mobilize and manage the resources around them to implement the curriculum.”

Similarly, Malcolm (1999) argues that effective teaching and capacity building as well as creating conditions that enable teachers to strive effectively towards desired student outcomes must be primary concerns of school leadership. Real change is translated into positive school atmosphere, by means of an effective teaching-learning process and innovative classroom practice.

6.7 DISCUSSION OF THE RESULTS OF FACTOR ANALYSIS OF STUDENTS' RESPONSES

From the responses of students, the factor analysis leads to four factors that are critical for the success or failure of implementing the new basic education curriculum:

- Student attitude to learning activity
- Subject content of the curriculum
- Friendly and supportive school environment
- Curriculum relevancy to real life and self-learning motivation

These four factors are clearly expressed and they encapsulate the main conclusions derived from discussion of the results of the quantitative analysis of students' responses. Therefore, the pertinent comments were already made. Nevertheless, it turns out to be opportune to go back to those comments and whenever necessary to make additional remarks.

6.7.1 Factor 1: Student attitude to learning activity

The study shows that student attitude to learning activity includes students' expectations, learning opportunities and outcomes (understood as learning performance in line with the discussion in section 6.5.8).

In connection with students' expectations, the concept of *positive teachers' expectations* translated into teachers' beliefs that their students can learn, has already been highlighted. Consequently, the students were expected to do their best at school. However, according to Good and Brophy (1989), this concept covers other important matters such as: (1) teachers assuming the role of facilitators; they accept responsibility for teaching their students; (2) teachers do not only believe that their students can learn, but above all, that they can teach the students successfully; (3) teachers help their students to overcome their learning difficulties, repeating explanation when required; and (4) if the regular curricular materials are not adequate, teachers obtain additional resources to help students to master the content.

Given these considerations, we argue that students' expectations are associated with positive teachers' expectations, which not only place the students in a challenging situation, but also in a supportive learning environment. Thus, in a sense students are to some extent, "forced" to perform well at school and have high expectations about learning effectively.

Students' learning opportunities depend mainly on the amount of time available for learning. Mingat (2005:114) argues that:

"...(i) time spent in school is a fundamental ingredient for learning (which should encourage some countries to increase this time), and (ii) the productivity of this time can vary greatly depending on how efficiently it is used."

Therefore, on the one hand, learning time may be analyzed in terms of a school year calendar or a daily school timetable, or on the other hand, in terms of how teachers

organize and guide learning activities, allowing students to spend time effectively and consequently perform better at school.

Teachers' and students' absenteeism should be vigorously counteracted and tolerated exclusively in serious emergencies. However, even under these circumstances, it is imperative that school leadership endeavour to find replacement teachers or assign effective learning tasks to students. Furthermore, teachers should take remedial measures to combat absenteeism.

High students' expectations associated with effective learning opportunities open the door to desired students outcomes. Meanwhile, as Good and Brophy (1989:34 -35) aver, it is extremely important that:

- Students should be aware that learning may take time and involve confusion or mistakes, but that persistence and careful work can eventually yield knowledge and skills mastery, which not only represents success on a particular task, but provides them with knowledge or skills that will make them more capable of handling future tasks at a higher level.
- Students need to know that their intellectual abilities are open to improvement rather than fixed and limited, and that they possess a great many such abilities. In short, students must realize that success depends not only on general ability but on the possession and use of specific knowledge and strategies.
- According to the teachers' behaviors, students should see that their efforts (even if they are wrong in the short run) lead to useful feedback that can help them achieve desirable goals.

6.7.2 Factor 2: Subject content of the curriculum

With regards to factor 2 (subject content of the curriculum), the students' responses indicated that some groups of students prefer certain subjects more than others. For instance, while a group of students stated preference for subjects linked to practical

activities such as arts and Physical Education, another group expressed a preference for Portuguese, Mathematics, English, Natural Sciences and Social Sciences. Levels of preference also vary considerably within groups.

As noted during the discussion of quantitative results, this finding raises the question that has been hotly discussed: should some subjects be removed, or should school textbooks for these subjects be withheld? The specific subjects include Arts, Crafts (Practical Arts), Music Education and Mozambican Languages: some people have boldly asserted that these subjects should be removed from the new upper primary curriculum in Mozambique.

Pursuant to arguments presented against the subjects' removal during the discussion on the quantitative results, the following remarks were pertinent:

- Concerning Mozambican local languages, to be taught as facultative subjects at upper primary level, it seems apposite to suggest that schools where Mozambican languages are not taught, could utilize the time scheduled for these languages to teaching Portuguese or another subject at discretion of the school leadership to meet the students' need with a view to improve their learning performance.
- Local language (i.e. home language or mother tongue) determines individual identity and exemplifies group or communal identity. Local languages therefore have to be preserved and developed as an integral part of presenting the local cultural heritage and protecting and respecting human rights. Moses (2002:27) aptly remark that:

If people cannot honor their own culture and history; both privately and publicly, they are essentially giving in to the oppressive pressure of forced assimilation into the dominant culture.

So, on the one hand, schooling in Mozambican languages is intended to renew and deepen students' connection with Mozambican culture, while promoting communication in a multi-lingual context with a view to enhancing national unity.

Music Education plays an important role in full and harmonious development of the psychomotor, emotional, communicative, cognitive and intellectual aspects of students' personal development.

Crafts (Practical Arts) are aimed at making the curriculum of basic education more relevant to real life. Thus, through Craft subjects it is intended in an early stage to set up the linkage between education and labour community activities of the geographical area in which the school is located, ensuring the development of the necessary skills of young students towards real life situations.

- According to PCEB (2003), Art subjects are intended to develop the ability to observe, discover, imagine and communicate through image as part of aesthetic education: creating, drawing, painting, modelling and making geometric constructions, among other activities. It is also an important contribution to full and harmonious development of students' personality potentialities in the psychomotor, emotional, communicative, cognitive and intellectual domains.

Obviously, as Tedesco (1997:16) points out

discussing the purposes of education regardless of operational considerations would be not only sterile from the point of view of action, but also abstract and infertile from a theoretical point of view.

However, Mahomed (1999:168) further avers that:

We have to set high goals for our education system if we are to reach any level of meaningful quality. Of course, the plan has to be shaped by the reality principle, and implemented solidly on pragmatic grounds.

According to Rasool (1999: 179), "learning areas are organized so that learners go beyond isolated facts, make connections across disciplines and help shape a more holistic view of life."

Thus, with a view to integrating the basic education curriculum through interdisciplinarity, some school textbooks may be combined to form one textbook instead of two or three different textbooks (e.g. Art and Craft subjects, Music and

Physical Education subjects, or Arts, Crafts and Music Education). In such cases it is important to take account of the resultant volume of material included in combined textbooks which will naturally depend on the goals defined for the integrated subjects.

Above all, as indicated earlier, the factor associated with subject preference calls attention to the need to revise classroom practice to ensure effective teaching-learning processes that cater for the interests of all learners in a variety of subjects and that motivate them to engage in active and sustained learning to achieve envisaged outcomes. Hameyer (2003:41) contends that *“the quality of a curriculum can only be as good as the quality of the curriculum process.”*

6.7.3 Factor 3: Friendly and supportive school environment

During discussions of the quantitative results yielded by the students' questionnaire, the items that suggest a friendly and supportive environment were isolated and the conclusion was drawn, accordingly, that the domain of school climate was being entered. Freiberg and Stein (1999:11) assert that,

“school climate is the heart and soul of a school. It is about that essence of a school that leads a child, a teacher, an administrator, a staff member to love the school and to look forward to being there each school day.”

Therefore, nationwide implementation of the new curriculum cannot be achieved unless all schools are committed to creating and ensuring a school climate that conduces to a friendly and supportive school environment. Freiberg (1999:10) argues that:

any one factor will not in itself determine a school's climate and its influence on the learning of students. However, it is the interaction of school and classroom climate factors that create a fabric of support that enable members of the school community to teach and learn at their optimum levels. While climate is mostly an affective or feeling element of learning, it has clear implications for achievement and academic well being. Lasting change comes from the little things in schools and classrooms.

A brief comment on the essence of this argument is appropriate. Going back to the discussion regarding students' opinions about the level of their school challenges and how they themselves felt challenged at their school, it is concluded from the above quotation that the level of challenge from the students' point of view can be explained at school level (macrolevel), and at the classroom level (microlevel) (See page 176).

Furthermore, it was noted that in the context of this environment, teachers maintain pleasant, friendly classrooms in ways that are perceived as enthusiastic and supportive facilitators or learning guiders. Undoubtedly, the school climate, with these features, appears as an affective element of learning with clear implications for students' achievements.

It is extremely important that the school leadership and teachers pay special attention to details of school organization with focus on classroom practice. If these things are done, lasting change will come from little things in schools and classrooms. According to Moises (2002:91) the students should feel valued and worthy, an essential condition through which "*they are more likely to have a sense of possibilities of their lives*", that is, of having a sense of being able to learn successfully if they engage seriously in study with the support of their teachers, and therefore achieve the desired outcomes.

Meanwhile, in order to ensure that all these remarks are translated into fruitful action, it is fundamental to not lose sight of the following remark of Van der Akker (2004: 9):

Cross-fertilization between curriculum teacher and school development is a **condition sine qua non** for effective and sustainable curriculum improvement. The increasingly popular mission statement of schools to become attractive and inspiring environments for students and teachers can only be realized when such integrated scenarios are practised.

6.7.4 Factor 4: Curriculum relevancy to real life and self- learning motivation

At an earlier stage of this report, more precisely in the beginning of the background information, it was highlighted that the main objective of the Basic Education

Curriculum Transformation Project was to make the curriculum more relevant to the new socio-economic and political reality of Mozambique.

In harmony with the students' responses to the survey questionnaire, the new curriculum is perceived as being relevant to real life, a feeling that, from the outset, might stimulate the students to learning. Nevertheless, the students' perception of curriculum relevancy may only last and be reflected in learning outcomes if the new curriculum is implemented effectively in classroom practices and other supplementary school activities.

As noted in section 2.2 of this report, the new curriculum as planned and formalised in a written document is only the intended curriculum, the ideal curriculum, which may look different from the operational, experiential or implemented curriculum. In this regard Hamayer (2003:31) avers:

The operational curriculum comprises other conditions compared to what is written in syllabus; and the perceived curriculum, in turn, emphasizes the views of students or parents of how they encounter the school curriculum.

Furthermore, Hamayer (2003:41) goes on to say:

The quality of a curriculum can only be so good as the quality of the curriculum process. This process has to take into account the self-renewing capacity of the individual school."

Although this quotation clarifies the discussion up to here, three factors relating to curriculum relevancy remain outstanding: (1) quality of curriculum; (2) quality of curriculum process; and (3) self-renewing capacity of the individual school.

The quality of a curriculum is mainly characterized by relevant content that provides knowledge and develops skills and attitudes, taking into consideration national education goals and the demands emerging of the process of regional integration as well as the global context. The quality of the curriculum process is exemplified by the quality of curriculum implementation, that is, how effectively the intended curriculum is put into practice.

Regarding the self-renewing capacity of the individual school, note the following consideration (*cf.* Bernhardt, 1999:2-4):

- The success of a school depends on its prior thinking about the improvement or restructuring process.
- School staff must understand from the beginning that major elements of change are internal rather than external, requiring a transformation of all individuals' thinking about schools, students, teachings and learning.
- A true collegial school must be learner centred; its staff must communicate effectively and continuously about student learning; and, they must work together, developing a learning continuum for students as their highest priority.
- These new ways of thinking and operating require strong teachers and principals who are capable of new levels of communication — who know from the start that there is no final destination, only the hard road ahead and that school improvement is a continuous process.

So, curriculum relevancy should be made appropriate in effective implementation, which in turn is reflected in students' desired outcomes.

We have discussed the correlation between the relevancy of curriculum and the related process, which is mainly driven by and dependent on students' motivation. As noted by Slavin (1989:10):

Students will be motivated to learn about a topic that is presented in an interesting way that makes sense to them, that they feel capable of learning. Further, students' motivation to exert maximum effort will be influenced by their perception of the difference between their probability of success if they exert themselves and their possibility of success if they do not.

It is important to note that students' self-motivation to learn is greatly determined by laying emphasis on the possibility of success if their sincere efforts are supported by their teachers.

6.8 ALIGNMENT OF RESULTS OF THE FREQUENCY ANALYSES WITH RESULTS OF THE FACTOR ANALYSES (COMMONALITIES)

6.8.1 Principals' questionnaires

The reliability analysis of data from the principals' questionnaire was based on 14 items. A Cronbach alpha value of 0.8418 was recorded, which is above the critical value of 0.7 serving as the benchmark for reliability of the measuring instrument.

Looking at the "corrected-item-total correlation" reveals no decline below the critical value of 0.3. This implies a sound correlation between individual items and the total score (Appendix D1).

Therefore, a comparison of Table 5.10 (summary of participating principals' attitudes, determined from the results of quantitative analysis) with Table 5.33 reflecting a rotated factor pattern matrix of the four factors extracted from principals' responses during the first-order factor analysis, and with Table 5.34 reflecting the clustering of four factors into two confirmed factors extracted from the responses of participating principals during the second-order factor analysis, we can see that:

- In the quantitative as well as the first factor analysis, the investigation accepted all 14 items of the concerning principals' questionnaire.
- The resulting factors were clustered or grouped into variables or items, some of which show strong internal consistencies, given their factor loadings in the factor analysis.
- The quantitative analysis shows how often each variable or item occurs (frequency of recurrence) and what percentage of the total this represents.
- Factor analysis revealed no correlation between the frequency of each variable and the relevant factor loading.
- The second-order confirmatory factor analysis excluded four items with low factor loadings. The excluded items were variables 15, 16, 21, and 23 (although the factor loadings indicated for the determined factors (*cf.* Table 5.10) are greater than 0.3, they are low, nevertheless, in comparison with other factor loadings).

[Note that according to Kline (1994: 6) “it is usual to regard factor loadings as high if they are greater than 0.6 (the positive or negative sign is irrelevant) and moderately high if they are above 0.3. Other loadings can be ignored.” Moreover, Kline (1994:6) asserts that “all interpretations of factors, based on loadings, should be validated against external criteria.”]

- Frequency or quantitative analysis and factor analysis basically led to the same conclusions (see section 6.7).

In effect, comparing the results of the quantitative analysis of the questionnaires given in Table 5.10 with the results of the first-order investigative factor analysis presented in Table 5.27, both relative to the principals’ leadership role can lead to meaningful conclusions. Thus, it became clear from the results of quantitative analysis that some aspects of the new curriculum had a critical bearing on implementation, as is shown by the relatively low percentage of participating principals who rated those aspects positively, namely:

- Level of school principals’ satisfaction with “local curriculum” development within their schools (70.2%, V23);
- School principals’ efforts to maximize the amount of school time provided for learning under the new curriculum (79.9%, V18);
- Level of satisfaction derived by principles from existing school climate, evidenced by sharing and cooperation towards successful curriculum implementation (79.9%, V21).

Table 5.27 illustrates, in reflecting the results of the first-order investigative factor analysis that all the aforementioned critical aspects are subsumed under the variables that were clustered to form a common factor - “school restructuring and reculturing” (see Table 5.27). Note that variable twenty-one (V21, see Table 5.27), is tied up with the other two factors (mutual support and professional development, as well as innovative teaching initiatives). In turn variables (V19) and twenty-three (V23) are also tied up with the factor “mutual support and professional development”. According to Table 5.27, other variables falling under “school restructuring and reculturing” are indicated below together with the related percentage of agreement ascertained from the quantitative analysis:

- Level of school principals' satisfaction with the renewal school organization to suit the requirements of the new curriculum (87.9%, V19);
- Principals' efforts to challenge teachers and students continuously to fulfil curriculum goals (80.7%, V13).

So, while in the first-order factor analysis, the variables V23, V18, V21, V19 and V13 were clustered in a common factor "school restructuring and reculturing", the frequency analysis highlighted the 'correlation' of the first three variables (V23, V18 and V21) and the last two variables (V19 and V13) through relatively low and high percentages respectively. The fact expressed in this statement shows that both analyses (quantitative and factorial) in light of the content of the clustered variables "school restructuring and reculturing" is a suitable common factor", except only that by joining the factor analysis together the variables as shown help to identify of 'correlation' even for investigation through frequency analysis. From the literature we know that restructuring and reculturing together with retiming are the three important dimensions of school resocialization, which is a time-consuming process (see section 1.6.5). Therefore, it makes sense that at the same time when 87.9% of the principals expressed their satisfaction with the level of school organization that was being created to cope with the requirements of the new curriculum, only 79.9% stated that the existing school climate enabled sharing and cooperation towards successful curriculum implementation. This also express the apparent contradiction between variable thirteen (V13) and variables twenty-three (V23) and eighteen (V18). The fact that some variables included in the factor labelled "restructuring and reculturing" are also connected with the factors "mutual support and professional development" as well as "innovative teaching initiatives" indicates the complexity and all encompassing nature of school resocialization, as indicated earlier (see the last paragraph of section 5.6.1).

In the quantitative analysis (Table 5.10), the following variables are notable:

- School principals' efforts to ensure improved achievement and to promote collaboration among teachers and develop new skills by sharing professional knowledge of the new curriculum (94.4%, V16);

- School principals' efforts to ensure improved student achievement by fostering a close relationship with teachers, other staff members, students and parents (92.8%, V10);
- Level of school principals' satisfaction with teachers' use of a variety of effective methods as required by the new curriculum (92.7%, V22);
- Level of school principals' satisfaction with efforts made by teachers to observe the interdisciplinarity principle in the lesson plans they devise in accordance with the new curriculum (92%, V20);
- School principals' efforts to ensure improved student achievement by coordinating and managing the learning process (91.9%, V15)

Regarding this group of variables derived from quantitative analysis, note that in accordance with Table 5.27, while the variables sixteen (V16) and ten (V10) are grouped with variables that were clustered in a common factor labelled "mutual support and professional development", the remaining variables (V22, V20 and V15) were clustered in another common factor labelled "innovative teaching initiatives". Notably, Table 5.27 shows that variable sixteen (V16) is also associated with the factor "innovative teaching initiatives". Furthermore, Table 5.27 illustrates other variables (of which percentages of agreement obtained in quantitative analysis are indicated in brackets) falling under the factor "mutual support and professional development". The variables are:

- School principals' efforts to ensure improved student achievement by putting in place an action plan produced collectively by the school for effective implementation of the new curriculum (87.9%, V11);
- School principals' efforts to ensure improved student achievement by means of effective professional development of the new curriculum (88.7%, V12).

Therefore, from both analyses (quantitative and factorial) two more factors for effective curriculum change were extracted: "mutual support and professional development" and "innovative teaching initiatives". This result is also supported by previous studies undertaken around the world concerning curriculum change (see sections 1.6.2 and 1.6.6).

Finally, in Table 5.10 another two variables — also highly rated — concerning school principals' efforts to ensure improved student achievement are indicated:

- Undertaking regular and productive staff meetings about the new curriculum (84.6%, V14);
- Continuous monitoring of teachers' performance on implementing the new curriculum (87.1%, V17).

As shown in Table 5.27, these two variables (V14 and V17) were clustered under the common factor labelled “Leadership”, which is the key factor, shown up in both analyses (quantitative and factorial), for successful curriculum change: they definitely condition the other identified factors of effective curriculum implementation in light of the school principals' role (see section 1.67).

It emerged earlier that some of the items representing certain factors have high internal consistencies with other factors. This fact was taken into consideration in confirmatory factor analysis. Furthermore, as indicated above, when the second-order confirmatory factor analysis was conducted four items with low factor loadings were excluded. So, in accordance with the Table 5.35, the reclustering of variables led to two factors: (1) Leadership and capacity building and (2) Innovative classroom practices. This result reflects, in essence, the quantitative analysis as discussed in connection with the first-order factor analysis and it corroborates the findings of previous studies on successful implementation of curriculum change.

6.8.2 Teachers' questionnaire

Twenty (20) items were included in the reliability analysis of responses to the teachers' questionnaire. The Cronbach's alpha value was 0.9142, which is above the critical value of 0.6, which implying that the measuring instrument provided reliable results.

The “corrected-item-total correlation” produced no value below the critical value of 0.3, which means that each item correlates well with the total score (Appendix F). Comparing Table 5.22 (summary of participating teachers' attitude) reflecting the results of the quantitative analysis with the rotated factor pattern matrix incorporating the five factors extracted from teachers' responses during the first-order factor

analysis (see Table 5.38) and with Table 5.39 on clustering of five factors into two confirmed factors, extracted from teachers' responses during the second-factor analysis, reveals the following:

- In the quantitative analysis as well as the first factor analysis, the investigation confirmed all 20 items concerning teachers' questionnaires.
- The resulting factors were clustered or grouped into variables or items with show strong internal consistencies, taking into consideration their factor loadings.
- The quantitative analysis shows how often each of the variables (items) occurs (frequency) and what the percentage of the total this represents.
- No correlation between the frequency percentage of each variable and related factor loading emerged from the factor analysis.
- The second-order confirmatory factor analysis was conducted excluding six items: V25, V29, V30, V33, V36 and V40.
- Frequency or quantitative analysis and factor analysis led to the same conclusions.

Thus, looking carefully at Table 5.22 (summary of participating teachers' attitude) reflecting the results of the quantitative analysis with the rotated factor pattern matrix of the five factors extracted from teachers' responses during the first-order factor analysis (see Table 5.39) and with Table 5.40 which shows the clustering of five factors into two confirmed factors extracted from teachers' responses during the second factor analysis, some meaningful conclusions were drawn. From the results obtained in quantitative analysis, as noted earlier, some variables were positively and highly rated by the surveyed teachers. The content of those variables involves aspects of factors that can enable successful implementation of the new curriculum. The variables concerned indicated with the rate of alignment in brackets and associated factors as follows:

- "I feel like I belong at this school" (81.9%, V24). The content of this variable expresses the sense of school ownership associated with the factor "Positive work environment".
- "I work with colleagues who treat me with respect" (88.3%, V29). The substance of this variable is related to mutual respect among staff. It is associated with the factor "Positive work environment".

- “I work with colleagues who listen if I have ideas about doing things better in the context of new curriculum” (81.9%, V30). The content of this variable expresses the possibility of teachers sharing suggestions in the context of implementing of the new curriculum. It is associated with the factor “Positive work environment”.

(Note that the associations of variables mentioned above with positive work environment is underpinned by Freiberg and Stein (1999:11), in their assertion that “school climate is about that quality of a school that helps each individual feel personal worth, dignity and importance, while simultaneously helping create a sense of belonging something beyond ourselves”).
- “My principal/ principal assistants/ learning cycle leader, learning area coordinator facilitates communication effectively” (80%, V32). The content of this variable emphasizes that principals are effective facilitators of communication in the process of implementing of the new curriculum. It is associated with the factor “Leadership”. In fact, effective communication is an essential aspect of leadership. As Lovat and Smith (2003:11) observe, “poor communication breeds suspicion and breaking down of group cohesion” (See sections 1.6.6 and 1.6.7).
- “I realize that effective involvement of parents and other stakeholders is needed for successful implementation of the new curriculum” (81%, V41). The substance of this variable emphasizes the need for effective involvement of parents and other stakeholders for successful implementation of new curriculum. It is associated with the factor “Capacity building”. The association of parents’ and other stakeholders’ involvement as a requirement for successful implementation of the new curriculum with capacity building is explained by the fact that parents and communities are becoming partners in striving for attainment of educational objectives, that is, active helpers and not only providers of financial or material support (Mentz and Xaba, 2007; Steyn, 2007). Middlewood (2001:116) noted earlier that “the recognition of the importance of parents to be more closely involved in learning partnerships with schools is vital”.

In light of the above discussion, three factors can be identified from the quantitative analysis of teachers' responses, namely:

- Positive work environment
- Leadership
- Capacity building

However, the quantitative analysis of teachers' responses also presents other variables, indicating that many aspects of the new curriculum implementation require special attention, as shown by the relatively low percentage of participating teachers who rated those variables positively, as follows:

- "I realize that student achievement data are an important tool for the improvement of student learning" (69.6%, V40). This variable refers to how teachers recognize the importance of student achievement data for monitoring the progress of each student or to what extent the teachers use those data to undertake appropriate measures to ensure good performance from students. So, the variable may be linked with the factor "Effective teaching". Indeed, effective teaching implies supportive teachers who, as noted by Waxman and Chang (2006:199), "can create a learning environment for students at-risk of academic failure to enhance learning outcomes". Hence, the importance of student achievement data.
- "I realize that effective professional development is helpful in fulfillment of curriculum goals" (67.5%, V38). The content of this variable is related to teachers' understanding of the importance of professional development, which is connected with "Effective teaching" or with "Capacity building". Freidus, Grose and McNamara (2001: 58), echoing several researchers such as Fullan (1993), Hargraves (1996) and McLaughlin (1991), emphasize that "reform success is contingent not only upon the sincere commitment of teachers and administrators, but also upon the knowledge and skills they bring, their willingness to learn and implement new practices, and the opportunities available to explore what they know and need to know". So the way to achieve effective teaching is capacity building, which, through the result indicated above, requires to be revisited to ensure successful implementation of the new curriculum.

- “I realize that the new curriculum has clear learning objectives and emphasizes the acquisition of basic skills” (71.1%, V37). This variable refers to teachers’ appreciation of the new curriculum with particular reference to basic skills. It may also reveal the depth of teachers’ understanding of the new curriculum and how they implement it. The result of the quantitative analysis indicates that there are doubts about the viability of the new curriculum in providing clear learning objectives and basic skills. So, this variable is associated with the factor “Effective teaching” and implies a special reconsideration since it also reflects the level of clarity, vision and goals reflecting in the new curriculum (See section 1.6.1).
- “I realize that student achievement can increase through active learning methods” (72.8%, V39). This variable underlines teachers’ understanding of using active methods in classroom practices. It is associated with “Effective teaching”. In this regard, Lovat and Smith (2003:74) note that “the essential components of effective teaching are command of subject, and knowledge of and **capacity to implement effective pedagogical practices**”.
- “I feel intrinsically rewarded for doing my job well in the context of the new curriculum” (54.8%, V28). This variable refers to the extent to which teachers consider themselves rewarded for working well in the context of the new curriculum. It can be associated with the factor “Rewarding” or with “Leadership” (see section 1.6.4).
- “I feel that teaching the new curriculum is fun at this school” (66.1%, V26). This variable is associated with the factor “Rewarding” or with “Leadership”. Notable in this regard is the observation by Brown, Oke and Brown (1982) that a dedicated and hardworking teacher will find the job quite rewarding owing to the success achieved in teaching as exemplified by the outcomes of his/her learners (see section 1.6.4).
- “I fell acknowledged for good work in the context of the new curriculum” (68.8%, V27). This variable is associated with the factor “Rewarding” or with “Leadership” for the same reason mentioned above.
- “I feel that school organization is changing and enabling successful implementation of the new curriculum” (70.6%, V25). This variable is associated with the factor “Leadership”. In this connection, McCallister

(2001:55) notes that “unless organizational structures are changed to promote collegial learning, reforms are likely to fail” (see sections 1.6.4 and 1.6.5).

- “My principal/ principal assistants/ learning cycle leader/ learning area coordinator is effective in helping us reach the new curriculum vision” (70.6%, V36). This variable is associated with the factor “Leadership” (see section 1.6.2).
- “My principal/ principal assistants/learning cycle leader, learning area coordinator supports shared decision making” (71%, V34). This variable may be associated with the factor “Leadership” (See section 1.6.4).
- “My principal/ principal assistants/ learning cycle leader, learning area coordinator allows me to be an effective instructional leader” (72.9%, V35). This variable is associated with the factor “Leadership”.
- “I have the opportunity to develop my teaching skills individually and to cooperate with other colleagues on the new curriculum” (79.7%, V42). This variable is associated with the factor “Capacity building” (see section 1.6.2)
- “I have the opportunity to grow professionally in the context of new curriculum implementation” (75.1%, V43). This variable is associated with the factor “capacity building” (see section 1.6.2)

As noted above, the variables that rated poorly after the quantitative analysis of responses to teachers’ questionnaire, considering their content may be connected with the following factors:

- Effective teaching
- Rewarding
- Capacity building
- Leadership

In a nutshell, five factors may be identified from examining the content and the frequency of the items: (1) Positive work environment, (2) Effective teaching, (3) Rewarding, (4) Capacity building and (5) Leadership. This result is reiterated through the first factor analysis (see Table 5.29). However, we saw earlier that some of the items or variables representing certain factors have high internal consistencies with other factors. This fact was taken into consideration in the confirmatory factor analysis. So, in accordance with Table 5.39 reflecting a rotated factor pattern matrix

incorporating five factors extracted from teachers' responses extracted during the first-order factor analysis, the reclustered variables led to two factors: (1) Leadership and Rewarding, and (2) Innovative classroom practice and capacity building (see table 5.40). This result is corroborated by the findings of the previous studies on successful curriculum change implementation referred to in relevant literature.

6.8.3 Students' questionnaire

The reliability analysis of responses to the students' questionnaire involved 75 items. A Cronbach alpha value of 0.9257 was recorded, which is above the critical value of 0.6, thus indicating that the measuring instrument was reliable.

However, looking at the "corrected-item-total correlation", it shows that 11 items, namely V46, V54, V85, V86, V88, V89, V90, V94, V96, V107 and V118, are items with values below 0.3, indicating that, according to Kline (1994), they can be ignored (see Appendix F1).

The 11 items indicated above were therefore excluded from the process of the first-factor analysis. The possible reasons for low loading of the ignored items were:

- The measuring questions were not collecting relevant information for the study.
- The measuring questions were not clear to the respondents, so they were giving irrelevant information.
- The questions seem to be randomly answered and not reliable. Therefore, they were not correlated with other items, which were thought to be correlated with them.

A comparison of Table 5.25, in which the perceptions, beliefs and attitudes of learners who participated in the investigation are summarised with Table 5.31 reflecting a rotated factor pattern matrix transformed into eight factors, extracted from students' responses during the first-order factor analysis (see Table 5.32) and with table 5.45 in which the reclustered variables of the eight factors into four confirmed factors, extracted from students' responses during the second factor analysis, reveals that:

- Whereas all 75 items were examined in the quantitative analysis, the investigation in first-order factor analysis excluded 11 items with low values identified through “corrected-item-total correlation” in the process of reliability analysis.
- The resulting factors were clustered or grouped into variables or items which show marked internal consistencies, considering their factor loadings.
- The quantitative analysis shows how often each variable or item occurs (frequency of recurrence) and what percentage of the total this frequency represents.
- Factor analysis did not reveal a correlation between the frequency percentage of each variable and the corresponding factor loading.
- Following the result of the first factor analysis, the second-order confirmatory factor analysis was conducted in which twelve items with low factor loadings were excluded. The excluded items were variables V72, V78, V56, V57, V62, V67, V45, V8, V47, V91, V55 and V105 (see Table 5.31).
- Frequency or quantitative analysis and factor analysis led to the same conclusions.

The results of quantitative analysis showed that some elements of the new curriculum were crucial for implementation, given the high percentage of the participating learners, who rated the said elements positively, namely:

- Their schools were good (81.3%, V61).
- Their teachers encouraged them to assess the quality of their own work, that is, work produced by students themselves (81.4%, V48).
- Their teachers expected them to do their best (81.8%, V69).
- The new curriculum would contribute to their education by inculcating the ability to present information (81.8%, V83).
- At school, they had opportunities to learn about each other (82%, V66).
- Doing well in school made them proud (82.4%, V63).
- They understood how to apply what they had learnt to real-life situations (83.5%, V47).
- Preference for Natural Sciences textbook (85.1%, V112).
- Their teachers were excited about the subjects they were teaching (86.3%, V78).

- They liked their schools (86.4%, V60).
- Natural Sciences regarded as the important subject (87.3%, V101).
- The new curriculum would contribute to their education by enhancing their skill at Mathematics ((87.9%, V82).
- Preference for Mathematics textbook (88.7%, V111).
- The new curriculum would contribute to their education by cultivating their writing skills (90.6%, V80).
- They found what they learnt in school to be relevant to real life (91.3%, V56).
- They read books other than their textbooks (91.4%, V117).
- The new curriculum would contribute to their education by cultivating their reading skills (91.6%, V81).
- Mathematics regarded as the important subject (92.5%, V100).
- Preference for Portuguese textbook (93.2%, V106).
- They like to learn (94.4%, V62).
- Portuguese regarded as the important subject (94.9%, V95).

Table 5.31, which reflects the results of the first-order investigative factor analysis of students' responses, shows that variables V106, V100, V95, V117 and V112 were clustered to form a common factor – “Portuguese, Mathematics and Natural Sciences as the most important subjects”. Variable V78 is an element of the factor labelled “Guidance and supportive role of teachers”. Six other variables falling under this factor were rated relatively lower in the quantitative analysis and were therefore excluded from the variables above. The variables were as follows:

- Teachers cared about their students (59.8%, V76).
- Teachers were understood when students had personal problems (65.5%, V71).
- Individual attention was given individual students when needed (71.3%, V79).
- Teachers had confidence in students' ability to learn (66.1%, V73);
- Teachers knew their students well (66,5%, V74);
- Teachers helped students to gain confidence in their ability to learn (78.7%, V72).

Variables V63, V69, V56 and V62, which were isolated by quantitative analysis shown in Table 5.31, were clustered in a common factor labelled “Student expectations and self-learning motivation”. Another three variables falling under this factor were rated

relatively lower in the quantitative analysis and were therefore excluded from the group of variables indicated above. The variables were as follows:

- Teachers expect students to do the their best (79.9%, V70);
- Students were doing their best (79.9%, V64);
- Students' participation in extracurricular activities was considered important (78.5%, V67).

Variables V60 and V61, which were isolated by quantitative analysis as indicated above, were subsumed under the factor "Friendly school environment" (see Table 5.31):

- School enjoyment (72.3%, V59).
- School safety (73.5%, V44).
- School ownership (78.4%, V45).

Variables V81, V80, V83, V84 and V82, which were isolated by quantitative analysis as indicated above, were subsumed under the factor "Curriculum relevancy to real life" (see Table 5.31). Variable V84 concerning the contribution of the new curriculum by cultivating ability of students to cope with technology also falls under this factor. It was not listed above, since it was rated lower (72.2%) in the quantitative analysis.

Variable V101 was subsumed under the factor "Civic and Moral Education, Social and natural Sciences as the most important subjects". Another three variables falling under this factor rated relatively lower in the quantitative analysis and were therefore excluded from the group of variables indicated above were:

- Social Sciences as the important subject (76.8%, V98);
- Preference to Social Sciences textbook (74.4%, V109);
- Moral and Civic Education as the important subject (80%, V99).

Variables V48 and V47, which were isolated by quantitative analysis as shown in Table 5.31, were consolidated as the factor labeled "Supportive school environment". Another three variables falling under this factor were relatively lower rated in the quantitative analysis and were therefore excluded from the group of variables indicated above. The variables were as follows:

- Students treated with respect by the school administrators (79.7%, V51);
- Students treated with respect by the teachers (75.5%, V50);

- Students treated with respect by the school office staff (64.4%, V52);

Variable V66 was subsumed under the factor “Relationships among students”. Another three variables falling under this factor were rated relatively lower in the quantitative analysis and were therefore excluded from the group of variables indicated above. The variables were as follows:

- Opportunity for students to learn from each other at their schools (74.4%, V65);
- Students respect other students who are different than they are at their schools (53.5%, V68);
- Mutual respect among students (55.9%, V53).

The variable V111 underscored above in reference to the quantitative analysis, as shown in Table 5.31, constitutes the factor labelled “Preference to Mathematics textbook”. It is important to note that a factor is inherently an aggregation of several measured variables. Therefore, it is not a true factor that is reflected in only a single measured variable. This implies looking for the other variables which correlate with that variable for building an inherently true factor as discussed earlier.

A number of variables covered by the factor analysis have not been discussed yet as a result of their low rating in virtue of the quantitative analysis. The content and the frequencies of the remaining variables are as follows:

- Students’ preference for Crafts/ Arts textbook (62.4%, V113).
- Students’ preference for Visual/ Aesthetic Education textbook (68.5%, V114).
- Music Education as the important subject (70.5%, V104).
- Students’ preference for Music Education textbook (70.2%, V115).
- Crafts/Arts as the important subject (66%, V102).
- Visual/ Aesthetic Education as the important subject (69.4%, V103).
- Students’ preference to Moral and Civic Education textbook (78%, V110).
- Teachers make learning enjoyable, fun (74.9%, V77).
- Teachers listen to their students’ ideas (68.8%, V75).
- Time spent working in small groups when teaching the new curriculum (69.7%, V87).
- Working in small groups as the appropriate learning strategy for students (71.3%, V93);

- Time spent on whole-class discussions with the teacher when teaching the new curriculum (50.1%, V86).
- Working in projects or research as the suitable learning strategy for students (65.5%, V91).
- Students are themselves responsible for what they learn at school (74.1%, V58).
- Students assess their own work (73.8%, V49).
- The work at school is challenging (60.4%, V55).
- English as the important subject (77.1%, V97).
- Student preference for English textbook (77.6%, V108);
- Student preference for Physical Education textbook (77.8%, V116).
- Physical Education as the important subject (77.9%, V105).

Variables V113, V114, V104, V115, V102, V103 and V110 were clustered to form a common factor labelled “Preference to Art and Moral Education”. The variables V77 and V75 were consolidated as a common factor named “Teachers competency”, while the variables V87, V93, V86 and V91 were subsumed under a common factor “Classroom practices”. The variables V58, V49 and V55 were grouped as the factor “Learning awareness”, while variables V97 and V108 as well as the variables V116 and 105, respectively subsumed under common factors labelled “Preference to English subject” and “Preference to Physical Education subject”.

As noted above, the quantitative analysis covered all items or variables, while the factor analysis discarded eleven low-rated items or variables identified from the outset through “corrected-item-total correlation”. The content and frequency percentage of these items as follows:

- Students felt challenged at their schools (64.7%, V46).
- Teachers have to assume responsibility for what students learn at school (73.4%, V54).
- Time spent listening to the teacher talk when teaching the new curriculum (50.9%, V85).
- Time spent in whole-class discussions with the teacher while teaching the new curriculum (50.1%, V86).
- Time spent reading in the process of teaching the new curriculum (63.5%, V88).

- Time spent answering questions from a book or worksheet in the process of teaching the new curriculum (71.6%, V89).
- Time spent analyzing individual or class performance in the process of teaching the new curriculum (60.9%, V90).
- Independent work as suitable learning for students (71.9%, V94).
- “Local Language” as the important subject (47%, V96).
- Preference for “Local Language” textbook (44%, V107).
- Exclusive reading of textbooks (22.4%, V118).

This last group of variables also deserves special attention. For instance, variables 46 and 54 can be relegated to the category “students’ expectations and self-learning motivation”, as indicated in sections 6.5.1. and 6.5.2. The variables V85, V86, V89, V90 and V94 give relevant information about students’ perceptions regarding classroom’ practice, teaching and learning methodologies (see section 6.4.5). Variables V96 and V107 show as was discussed in section 6.4.6 the incipient signs of “local language” subject, which should be reconsider if the effective implementation of this innovation is to be implemented to good effect.

The considerations mooted in the general discussion above lead us to understand how quantitative analysis and factor analysis supplement each other. It was shown earlier that some of the items or variables representing certain factors have high internal consistencies with other factors. Therefore, in the first-order factor analysis through clustering of the correlated variables only eight factors were extracted: (1) Preference for Art subjects, (2) Mathematics and Natural Sciences perceived as the most important subjects, (3) Competence of teachers and classroom practices, (4) Student expectations and self-learning motivation, (5) Friendly and supportive school environment, (6) Curriculum relevancy to real life and self-motivation, (7) Preference for Moral Education and Social Sciences, and (8) Portuguese and English perceived as the most important subjects (see Table 5.32). Following the second-order confirmatory factor analysis, the number of factors was reduced into four factors: (1) Student attitude to learning activity, (2) Subject content of the curriculum, (3) Friendly and supportive school environment and (4) Curriculum relevancy to real life and self-learning motivation (see Table 5.45).

As indicated during the analysis of the results throughout section 6.5, these factors are consistent with the main findings identified in similar studies reported in the literature.

6.9 SUMMARY

This chapter analyzed and discussed the results of the empirical investigation reported in chapter 5. The association of quantitative analysis, factor analysis and reflection on pertinent literature regarding curriculum change implementation produced valuable insight into the subject of the current study. In the section analysing teachers' attitude a widespread lack of confidence is recorded by teachers in their capacity to perform their teaching role effectively in the context of the new curriculum. Therefore, incentives to motivate teachers to enhance and consolidate their academic knowledge on the basis of self-learning and cooperation among colleagues are needed. Above all, the findings lead us to reiterate that strong school leadership, enhancement of teachers' capacity and innovative classroom practices should be ensured, if implementation of the new curriculum is to succeed. It follows too, that principals' expertise needs to be upgraded to ensure positive fulfilment of their obligations.

The study reveals that students confirmed their readiness to learn to which end they needed appropriate guidance, support and learning opportunities from the school.

The main conclusions of the research under review will be brought into closer alignment with the research questions in chapter seven, the final chapter which concludes this study. The final chapter will also contain pertinent recommendations as well as a discussion of the consequences that can be expected if they are implemented. Finally the limitations of the study will be outlined and suggestions will be made towards the implementation of the new Basic Education Curriculum (BEC) in Mozambique.

CHAPTER 7

THE MAIN FINDINGS, CONCLUSIONS, RECOMMENDATIONS AND IMPLICATIONS

7.1 INTRODUCTION

In chapter six, the results reported in chapter five were analyzed and discussed in terms of the responses collected during the investigation. The aim of chapter seven is to report on the conclusions in terms of the research questions listed in chapter one of the report. Therefore, chapter seven, preliminarily, recalls the main problem, research questions, aims and objectives of the investigation. Following the main conclusions, by means of which the lessons learned from the study are generalized, recommendations were made for successful implementation of the new curriculum for basic education throughout Mozambique. A number of limitations have also been listed, preceded by a reflection on the findings. Finally, some implications of pertinent recommendations were highlighted.

7.2 THE MAIN PROBLEM, RESEARCH QUESTIONS, AIMS AND OBJECTIVES OF THE INVESTIGATION

Mozambique has undergone profound sociopolitical changes. It has moved from a one-party state to a multiparty democracy. Currently, emphasis is placed on democracy, human rights and gender issues. In order to make the basic education curriculum more relevant to the new socioeconomic and political reality, Mozambique decided to embark on a transformation process (Mário et al., 2002; Bazilache, Dhorsan & Tembe, 2004).

However, Mozambique is a poor country, still dependent on external aid. It has also gone through a structural adjustment process and many companies were privatized. Now, it has moved from a planned to a free market economy system. Major investments are being made in the country and new skills are demanded from the work force.

A critical issue that must be addressed arises from the fact that Mozambique is not a culturally homogenous country. The reformed curriculum was, in many cases, in direct confrontation with non-formal education, which is still strong in the communities. It is equally important to note that education is a dynamic process and, as such, is subject to a continuous process of change: new technologies, methods and strategies are continually being developed. Mozambique needs to select the more relevant and updated methods to improve the quality of education delivery in schools.

Successful curriculum implementation relies on several factors, such as school environment, availability of resources, teaching-learning methodologies, evaluation strategies, sociocultural setting, and attitudes of learners, teachers and other stakeholders involved in the process (according to many writers such as Oliver 1971; Bobbitt 1971; Giacquinta 1998; Busher, Harris & Wise 2000; Fullan 2001; Hewitt 2006).

The problem is that despite efforts at implementation, it is still not clear how the learners, educators, subject specialists and principals have experienced the new curriculum introduced in 2004. It also remains to be seen whether school members are clear about the nature of the change, the reasons behind it and how it is supposed to be implemented. Above all, it is not yet known whether the classroom practices developed by educators really meet desired ends, and whether schools receive the necessary support to implement the new curriculum. These are the critical issues that will determine the success of curriculum implementation and that have prompted this study, which sought to examine the status of the new curriculum of basic education in Mozambique a year from inception.

The above considerations led to the central question of the study: *What are the factors on which successful implementation of the new basic education curriculum in Mozambique is critically dependent; and to what extent are these factors in place as required?* The following subquestions, derived from the main research question, were formulated towards addressing that question:

- What is the nature of the new curriculum and to what extent does it prescribe its implementation?

- What are the perceptions of learners, educators, subject specialists and principals regarding the new curriculum?
- How does the new curriculum find expression in the classroom practices of educators?
- What efforts are being made towards successful implementation of the new curriculum?

In response to these questions this study sought to trace the first year of progress made towards implementing the new curriculum for basic education in Mozambique, to which end particular attention was focused on classroom practices, overall school conditions, and the influence of endogenous and exogenous school factors on implementation as succinctly reflected in the following conclusions drawn from the investigation.

7.3 CONCLUSIONS DRAWN FROM THE MAIN FINDINGS OF THE INVESTIGATION

7.3.1 Nature of the new curriculum and the plan for its effective implementation

7.3.1.1 Nature of the new curriculum

Marsh and Willis (2003) hold that the curricula of contemporary schools rarely reflect a single, exclusive approach. In general, contemporary curricula have been created eclectically, using a mixture of alternative approaches, whether or not the people most concerned with their design were aware of this. In fact, the new curriculum for basic education in Mozambique does reflect features of different approaches. The characteristics of the behavioural approach are evident in the framework and syllabi philosophy of the new curriculum. Thus, as noted in section 2.3.1, the overall exercise of curriculum change started with a thorough diagnosis of the impact of the former curriculum in terms of its effectiveness in students' learning outcomes (i.e. skills, attitudes and knowledge). The general objectives set up in the National Education System Act for Basic Education were re-examined and re-elaborated as the cornerstone of the new curriculum. In the perspective of integrating the curriculum by introduction an interdisciplinary strategy, the re-conceptualised objectives build the intended graduated basic education profile or outcomes in the

domains of (1) personal development, (2) socioeconomic development, (3) technical and scientific development and (4) cultural development (PCEB, 2003). These objectives/outcomes are reflected in each curricular subject and from them the specific objectives were derived.

The features of the managerial approach are obvious in section 3.4 of this thesis. In this respect, the PCEB asserts that the success of any curriculum change initiative is unquestionably linked to the appropriate use of implementation strategies designed to offer school support for effective curriculum change. As indicated in section 2.3.3 of this thesis, the systems approach is reflected in the policy dialogue and consensus building that characterized the process of construction of the new basic education curriculum. In this context, it is worthwhile to emphasize the modalities of consultation and participation in formulating the curriculum transformation policy, the basic education objectives, integrating the curriculum through interdisciplinarity, rendering the curriculum relevant to Mozambican society, piloting and monitoring implementation of the new curriculum, et cetera. The academic approach is reflected in the three purposes envisaged for the Mozambican new curriculum for basic education, namely delivery of (1) basic literacy and numeracy, (2) basic technological skills in domain of practical activities and arts, as well as (3) patriotic education expressed in the three comprehensive curricular areas defined in the PCEB, namely:

- Communication Skills and Social Sciences;
- Mathematics and Natural Sciences; and
- Practical and Technological Arts (see sections 2.3.4 and 3.3.3 of this thesis).

The humanistic approach is reflected in the endeavour to make the new curriculum relevant to the learners themselves and to their families and communities, as well as to society at large (PCEB, 2003). It is also evident in Chapter Two of the Curriculum Framework of Basic Education (PCEB, 2003) where the political, economic, socio-cultural and educative contexts are presented that inform the curriculum design. Chapter Three of the same document presents the general policy pursued by the new curriculum, focusing especially on learner outcomes in the domains of personnel, socio-economic, cultural and knowledge development.

7.3.1.2 The plan for effective implementation of the new curriculum

Among other measures, the strategies for implementing the new curriculum include: the construction and expansion (to complete) primary schools, teachers' upgrading, and teacher education — initial teacher training (see section 3.4.1).

Another planned strategy is the support offered to schools during implementation of the new curriculum. The curriculum transformation management bodies, especially at provincial level, were instructed to monitor and provide the necessary support to schools in the process of implementing the new curriculum. Other than the curriculum design and development roles, INDE has had to perform the educational research function, for which it has set up a monitor group, known as the ethnographic group, and a supervision group in its capacity as coordinator of the overall process of curriculum transformation (see section 3.4.2).

Added to this, the preparation of school textbooks and teachers' guides in accordance with the syllabi of the new curriculum were strategies adopted within the remit of the new curriculum implementation.

The management bodies' main weakness during the curriculum transformation process, which impacted negatively on the implementation across the nation, was the actual project character, as the support was time specific. This means that when the time schedule for the new curriculum project elapsed, the management bodies dealing with curriculum transformation were debilitated or simply ceased to function. Yet curriculum development is an ongoing process that requires regular review and continuous support to ensure its effectiveness.

Moreover, when the active involvement of top political decision-makers (e.g. Minister of Education) and other key stakeholders is not sustained for various reasons such as removal from office, the coherence and sustainability of curriculum change and development tend to suffer immensely. In the Mozambican case, the transformation process in its design stage started with one Minister supported by a Representative and Head of Local UNESCO Office, among others. Both these people ended their term of office during the process of curriculum change and their positions were filled by new appointees. It is worth noting, that the change of Minister was also followed

by the change of Provincial Directors, who in turn made significant modifications in the composition of the management structures at provincial level. Whereas the curriculum change process proceeded, it nevertheless lost a lot of momentum before the new appointees were fully in control of implementation process. This situation is accurately described by Peretz (2003) who expresses the view that curriculum transformation is a participatory process involving diverse forces, and argues that closer and positive interaction between these forces embodied in strategically placed, individuals such as Ministers of Education, teachers and stakeholders (e.g., parents, unions and employers) have a synergetic effect that raises the feasibility of successful reform. However, he also notes that any disturbance in the positive relations between these forces could detract considerably from the effectiveness of the curriculum change process and consequently lead to its failure (see section 3.5).

7.3.2 The perceptions of learners, educators, subject specialists and principals regarding the new curriculum

7.3.2.1 The perceptions of learners regarding the new curriculum

So in the light of the above, we may conclude that, in agreement with Monyokolo and Potenza (1999:232), the three key pillars or the essential components of the curriculum were taken into consideration: “(1) curriculum development, including illustrative programmes and progress map’s or some framework for assessment; (2) learning materials based on the illustrative learning programmes and (3) teacher training that would assist teachers to translate all of the above into practice”.

The following conclusions, referring to learners’ perceptions of school and learning, were derived from quantitative analysis aligned with a factor analysis. These conclusions are also underpinned by relevant and pertinent literature (see section 6.93).

a. A friendly and supportive school environment is a key factor for successful curriculum implementation.

Indeed, according to Table 5.25, the majority of the students (86.4%) who participated in the study stated undoubtedly that they liked their schools and 81.4% of the surveyed students clearly expressed their agreement with the opinion that their teachers encouraged them to assess the quality of their own

school work. In the same vein, 81.3% of the surveyed students were of the opinion that they were attending good schools, while 72.3% felt that their schools were fun and enjoyable. Students also clearly expressed that they felt safe at their schools (73.5%) and 78.4% of the students felt a sense of belonging in their schools. Students' enjoyment of their schools is a function of how safe they feel there and their enjoyment depends on their sense of school ownership. Strikingly, as pointed out above, a relatively higher percentage of students indicated that they liked their schools and rated them as good ones. However, it is obvious that a friendly, supportive school environment should be cultivated, as can be seen from the following results (see Table 5.25):

- Teachers care about students (59.8%).
- Teachers understand when the students have personal problems (65.5%).
- Individual attention is given to each student when needed (71.3%).
- Teachers have confidence in students' ability to learn (66.1%).
- Teachers know their students well (66.5%).
- Teachers help students to gaining confidence in their ability to learn (78.7%).

In this regard, Khine and Lourdsamy (2006:31) contend:

It is important for teachers to have a caring disposition towards their students, believe in their students' ability to learn and establish a harmonious relationship with their students. Because it is from these relationships between the teacher and his/her students that student motivation to engage in learning can be realized.

Similarly, Brown, Oke and Brown (1982) note that students are very perceptive and likely respond favourably if they perceive a positive attitude or warmth in a teacher. If they sense that the teacher does not really care whether they succeed or not they will become discouraged and may even cause a discipline problem for the teacher concerned. Furthermore, still in this context, Waxman and Chang (2006) strongly suggest that teachers should make every effort to know their students well, not only in terms of basic demographic or

background information such as number of siblings, or employment status of their parents, but also about students' goals and aspirations.

The research also indicates that respectively 75.5%, 79.7% and 64.4% of surveyed students (see Table 5.25) agreed that their teachers, administrators and office staff treated them with respect. Concerning students' relationships among themselves at their schools, only 55.9% and 53.5% of the students (see Table 5.25) clearly agreed that other students treated them with respect and respected peers who look different. Impressively, 82% of participating students (see Table 5.25) agreed that in their schools they had opportunities to learn about each other. So, looking at student relationships at schools, three concerns were examined in this regard: whether a student was treated with respect by other students at the school, whether the students respected other students who are different to the norm, and whether they had opportunities to learn from and about each other at school. The results of the first two concerns were almost the same and characterized by a low rate in contrast to the high rate of the third. Consequently, there is a strong need to pay attention to the students' relationships among themselves, ensuring the effective use of opportunities to learn from and about each other at school. Gould (1996:94) recommends that teachers organize their classrooms and their curriculum so that to facilitating real learning, students can collaborate, interact, and address questions to both classmates and teacher. Indeed, Neagley and Evans (1967:34) argue that "pupils learn much from one another; those who have been together for years learn new material more easily from one of their own group than they do from strangers." Lovat and Smith (2003:3) emphasize that "it is important for students to talk to one another if they are going to learn effectively."

b. Students' attitude to learning activity is critical for successful curriculum implementation.

Referring specifically to attitude towards learning, the overwhelming majority (94.4%) of students who participated in the research explicitly expressed a positive attitude stating that they liked to learn. In the same vein, it should be emphasized that 82.4% of the students who participated in the study agreed

clearly that doing well at school made them feel good about themselves, while 79.9% of the students stated that they were doing their best at school. Added to this, 73.9% of the students stated that they actually assessed their own school work. Although 73.4% of the surveyed students expressed the opinion that their teachers were responsible for what they learnt at their schools, 74.0% of the students stated that they realized that they themselves bore the greater part of responsibility for what they learnt at school. In addition, 74.4% of the participating students expressed agreed that they had opportunities to learn from each other at their schools.

These results are in line with the sentiment expressed by 77.3% of the students that they were successful at their schools. It is impressive that 94.4% of surveyed students stated that they liked to learn, but only 77.3% of the students who participated in the research felt they were achieving success their schooling. Similarly, it is remarkable that 82.4% of participating students professed that doing well at school made them feel proud whereas only 79.9% stated they were doing well at school. In this regard, Waxman and Chang (2006:214) rightly observe that “educational failure of students is indicative of the failure of the school to teach and connect to students’ lives in meaningful ways”.

The researcher believes, therefore, that schools should undertake the process of resocialization (see section 1.6.5) to ensure successful learning and thereby meet their aspirations. Dorman (2006:4-5) points out that “in today’s information age, jobs are increasingly demanding higher levels of literacy skill and critical thinking and these demands require students to actively engage and monitor their learning rather than passively receive knowledge.” Indeed, Neagley and Evans (1967:20) note that “the learner should assume major responsibility for his own learning”. Echoing Wells and Chang-Wells (1992), Gould (2001:98) underscores that “another important reason for encouraging learners to take ownership of learning is that it increases intrinsic motivation to seek and carry through a way of finishing a piece successfully.” In other words, it is advocated that students undertake self-regulation which should be stimulated and guided by the teacher. This means that the teacher’s role as

facilitator is essential to ensure that the learner is taking responsibility for his own learning, which often hinges on the teaching strategies employed by the teacher. Indeed, De Vries and Zan (2001:118) rightly remark that “emphasis on the child’s self-regulation fosters self-confidence, an attitude of questioning and critical evaluation, and motivation to think about causes, implications, and explanations of physical and logical as well as social and moral phenomena.”

c. The relevancy of curriculum to real life and the student self-motivation are a fundamental condition for successful curriculum implementation.

While 91.3% of the total of the student participants in the research agreed that they found what they learnt in the schools relevant to real life (see Table 5.25), only 83.5% stated that they understood how to apply in real life what they learnt at their schools. However, concerning the work done at schools, only 60.5% of the respondents agreed that the work at their schools was challenging in context of the new curriculum. Meanwhile, 64.6% of respondents from the three participating provinces felt challenged at their schools. This apparent contradiction was explained in section 6.5.1

Regarding participation in extracurricular activities, 8.6% of the surveyed students questioned the importance of their participation in those activities, while 12.9% were undecided. Therefore, it seems that there is a need to change this perception and to involve these students, possibly by changing or extending the extracurricular activities on offer to ensure that the students emerge from the schools with more than just an academic education.

The findings of earlier studies regarding learning relevancy (Slavin, 1989; Good & Brophy, 1989; Gould, 2001; Lumby, 2001; Kyriakides, 2006) show that worthwhile learning is a very important student motivation factor. The researcher found in the study under review that the majority of the students indicated that they liked to learn and liked their schools, and that they find the new curriculum relevant. This makes the effective implementation of the new curriculum even more important.

d. The subject content of the curriculum is critical for successful curriculum implementation

The students' responses regarding the subject content of the curriculum indicated that different groups of students had different subject preferences. For instance, while some preferred subjects linked to practical activities such as arts and physical education, others expressed a preference for Portuguese, Mathematics, English, Natural and Social Sciences.

Levels of preference for favourite subjects varied considerably within these groups. For instance, while over 85% of respondents attached superior importance to Portuguese, Mathematics and the Natural Sciences, fewer than 70% considered the visual/aesthetic education and craft/art subjects to be equally important. English and physical education were rated as important subjects by between 75% and 80% by the surveyed students. Fewer than 50% of the students considered the local language as important subject. While it is true that "all of us learn by making choices" (Gould, 1996:100), it is also true that such choices are influenced by various factors. In the present case of school subjects in general, the teacher's role in motivating students to learn different subjects is crucial. As a matter of fact, the new basic education curriculum in Mozambique encourages interdisciplinary approach in order to develop learners' knowledge, skills and values in an articulated way in all the learning areas of the curriculum (see section 3.3.2). Brown, Oke and Brown (1982:4-5) observe that "if a teacher approaches a subject from a narrow viewpoint without seeing it from a wider perspective in relation to other subjects and life itself, he could be said to be teaching or training and not educating. For the benefit of our students we should attempt to do more than teach or train — we should educate." In other words, by delivering curriculum in an interdisciplinary way the teachers can show that everyone is called to be a artist in the construction of a better life and a better world (Wickersham 2002:128). This means that 'best practice' includes "developing the habits, abilities, thoughts, ideals, technical mastery, and virtues of the practice" and is intended for both teachers and students (Wickersham 2002:128). At the same time, the influence of hidden curriculum cannot be discounted here (see section 3.3.2).

In line with the discussion in section 2.2 about the curriculum as concept and specifically, concerning ‘planned curriculum’, ‘implemented curriculum’ and ‘experienced curriculum’, Von Glasersfeld (1996) observes that students perceive their environment differently from the perspective or intention of educators. Such environment includes curricula, textbooks, tasks they are given, among others. Similarly, Glatthorn, Boschee and Whitehead (2006:23) note that students learn a great deal in school from sources other than the intended curriculum, but which are relative to the school atmosphere. Therefore, while “the term hidden curriculum is often used with negative connotations that learning can be both desirable and undesirable from the viewpoint of one aspiring to optimal human development”, great importance should be attached to the school organization and the embedded environment to ensure that this hidden curriculum is a positive, rather than a negative, influence.

With regard to the specific case of the local language as a subject, or more broadly speaking, the bilingual programme, the problem is beyond the teacher’s responsibility. As shown in section 6.5.6, the local language is being introduced gradually as a subject and the materials used are still at piloting stage and in relatively short supply. In fact, putting the issue more bluntly, the materials used for this are usually photocopies (the illustrations in those texts are not coloured) and not textbooks. By contrast, in other subjects offered in Portuguese, or even better, in the Portuguese monolingual program, the materials were edited and colour printed. The recent report (2008, July) on medium term evaluation of implementation of UDEBA-LAB²⁹ strategic plan raises this problem of the dearth of appropriate school textbooks for the bilingual education programme. The evaluation report underlines that learners’ parents or tutors are concerned that the bilingual programme attended by their charges may be substandard because of the appearance and scarcity of tuition materials. This reality is reflected in the findings concerning local language teaching as contained in the present report.

²⁹ UDEBA-LAB (Laboratory Unity of Development of Basic Education based in Gaza Province) is a technical, scientific, cultural and social association that is a non-profit organisation. It convenes all stakeholders who endeavour to develop basic education in Mozambique. It is sponsored by the Netherlands a contract basis.

7.3.2.2 *The perceptions of educators regarding the new curriculum*

Concerning perceptions of educators, as a result of quantitative and factor analyses supported by the relevant literature on curriculum implementation, especially on the role of teachers, the following conclusions were determined (see section 6.9.2):

a. Leadership and rewarding are a key determinant of successful curriculum implementation

The surveyed teachers reflected little confidence in their attitudes and beliefs as factors that can assist implementation of the new curriculum. For instance, 33.9% of the teachers disagreed with the perception that teaching the new curriculum was fun at their schools. About 30% considered that they had not been given the necessary support to implement the new curriculum, and almost half of the teachers (45.3%) indicated explicitly or implicitly that they did not feel intrinsically rewarded for doing their job well in the context of the new curriculum. They indicated that the new curriculum lacks a *compatible organizational or social envelope surrounding the innovation*. This has consequences on teachers' motivation, commitment and interest in teaching the new curriculum at their schools. In fact, as Day and Kington (2008) point out, curriculum change affects not only teachers' work, but also their perceptions about their work, their emotional identities, that is, how they feel about their work and interact with the social, cultural and school environment where they work. Menter (2008:58) emphasizes that "the condition of teachers' identities — collective and individual — is an indicator not only of the condition of an education system, but also — to some extent — of the condition of democracy within a society." In other words, it seems fair in light of this observation, to conclude that the more democratic a society is, the higher the teachers are regarded. Indeed, as Grose (2001:80) asserts "schools are important democratic institutions in their local communities". This implies that the extent to which a school meets the criteria for a democratic institution directly determines how gratifying teachers find their teaching task. Lieberman (2001:161) comments incisively: "Doing good but getting grief for it takes emotional toll."

The majority of teachers who participated in the study showed that they identified with some aspects linked to leadership that are worthy to be preserved, consolidated and improved: (1) mutual respect among teachers (88.3%); (2) school ownership (81.9%); (3) sharing innovative ideas about curriculum implementation (81.9%); and (4) parents' and other stakeholders' involvement in curriculum implementation (81%).

These findings are clear indications that schools' potentialities should be explored by the leadership to promote collegial learning, which is essential for successful curriculum implementation (Van den Akker, 2003; McCallister, 2001; Fullan, 2001; Richert, Stoddard & Kass, 2001; Bernhardt, 1999).

b. Innovative classroom practices and capacity building is an essential factor for successful curriculum implementation

Of the total of the teachers who participated in the study, only 72.8% endorsed the view that student achievement could be improved by resorting to active learning methods. Only 75.1% of the surveyed teachers expressed the view that their principals were effective instructional leaders, and that they had enough opportunities to grow professionally in the context of implementing the new curriculum. Therefore, it seems that the principals' ability to deal with pedagogical issues and use active methods effectively was questioned by teachers. This attitude might be prompted by common problems such as inadequate professional preparation (training) of teachers, difficulties experienced as managing large classes, and generally poor, often very poor working conditions. Such environments negatively affect the efficacy of active learning methods which are at the core of the new curriculum. Hall and Hord (2001) contend that regardless of the best possible support (which is always necessary) teachers will tend to be sceptical even about promising and brilliant innovations. Why? There are moments of enthusiasm when proposed changes seem bound to succeed, and moments of frustration when they seem to be doomed to failure. Therefore, strong leadership is needed to ensure teachers' resilience (Waxman & Chang, 2006). In this regard, Bernhardt (1999:84) avers that "while teachers need the opportunity to be cathartic, leadership needs to keep staff positive, perhaps, by celebrating how far they

have come already.” Most importantly, it should be remembered that a teacher cannot implement the new curriculum successfully unless he/she has a thorough knowledge of the subjects he should teach, a good general knowledge, the ability to apply active teaching and learning methods effectively, and the will to learn and implement new practices. Consequently, effective capacity building is required that includes the establishment by teachers of “professional learning communities” within their schools (Fullan, 2001; Freidus, Grose & Mcnamara, 2001; Middlewood, 2001; Erickson, 2007).

7.3.2.3 Subject specialists’ and principals’ perceptions regarding the new curriculum

The attitudes of participating principals regarding their leadership role in the process of curriculum implementation in their schools were very positive. The principals revealed that they were well aware of their responsibilities for which they needed better guidance and support from ZIP, District Office and higher hierarchical levels to enable them to implement the new curriculum successfully. According to Middlewood (2001) observed, such attitudes show that the school principals believe that their organizational leadership is primarily centred on the curriculum or on learning, since this is the core purpose of schools. The surveyed school principals’ responses to the research questionnaire in this regard confirmed the findings of earlier studies concerning the key role of school leadership in the process of curriculum change. This key role is emphasized in the theoretical framework (see section 1.6.7).

Thus, in virtue of the quantitative analysis and the associated factor analysis of principals’ perceptions of the new curriculum and the findings of previous studies as reflected in the literature on curriculum implementation, with particular emphasis on the role of principals in curriculum implementation, this study reached the following conclusions (see also section 6.9.1):

a. Leadership and capacity building are a critical factor of successful curriculum implementation

In response to questions regarding principals’ endeavours to ensure that student’s achievement increase in the context of the new curriculum (see

Table 5.10), the surveyed principals explicitly expressed agreement with the following actions or strategies:

- Developing close relationships with teachers, other staff members, students and parents (92.8%);
- Bring into operation an action plan produced collectively in school for effective implementation of the new curriculum (87.9%);
- Rendering effective professional development program on new curriculum (88.7%);
- Challenging teachers and students continuously to fulfill curriculum goals (80.7%);
- Undertaking regular and productive staff meetings on the new curriculum (84.6%);
- Promoting collaboration among teachers through which they were developing new skills by sharing professional knowledge regarding to new curriculum (94.4%);
- Monitoring continuously teachers' performance on new curriculum (87.1%).

However, the principals revealed that they had some concerns regarding the maximization of the amount of school time used for learning (only 79.9% of principals who participated in the study clearly stated that they agreed with this strategy). Strikingly, only 20.1% of the surveyed principals implicitly expressed their dissatisfaction with the level of school climate already created in their schools in terms of sharing and cooperation on all issues towards effective implementation of the new curriculum. Worst of all, 29.8% of principals expressed their unhappiness concerning the achieved stage of design and implementation of 'local curriculum' in their schools.

b. Innovative classroom practices

Concerning innovative classroom practices for successful curriculum change implementation, the principals rated the relevance of:

- The new school organization was being implemented to cope with the requirements of the new curriculum (87.9%).
- Coordinating and managing learning process in the context of the new curriculum (91.9%).
- Considerable efforts of teachers to observe the interdisciplinarity principle in the lesson plans they were making as set up in the new curriculum (92%).
- The use of a variety of active methods by teachers in classroom practices as required by the new curriculum (92.7%).

These findings clearly provide the key issues, which should be stressed during the preparation of school principals in Mozambique for successful performance of their school leadership role under the new curriculum, starting from school resocialization in its complex three dimensions: restructuring, reculturing and retiming (see section 1.6.5). Furthermore, the findings show that the school principals should spend as much time focusing on curriculum leadership tasks as on school administration. The Mozambique experience in the education field shows that, as in other parts of the world, school principals have concentrated more on administrative tasks than on pedagogical issues (Marsh & Wills, 1999).

7.3.3 The new curriculum and classroom practices of educators

When responding to questions on innovative classroom practices for successful curriculum change the principals who participated in the study emphasized:

- The use of a variety of active methods by teachers in classroom practices as required by the new curriculum.
- Considerable efforts from teachers to observe interdisciplinarity principle in the lesson plans they were making as set up in the new curriculum.

The students' opinions about time use in their classes in the context of the new curriculum confirmed that a variety of strategies were applied in this regard. However, the data show that some of the strategies seemed to be used more frequently than others. For instance, analyzing individual or class performance (60.8%), reading (63.5%), working in small groups (69.7%) and answering questions from a book or

worksheet (71.5%). The strategies that reportedly were used less frequently are whole-class discussions with the teachers (50.1%) and listening to teachers talk (50.9%), which should be seen as positive development in classroom practices as opposed to those used in the past.

These findings confirm the principals' efforts towards moderation and variation in strategy used in classroom practice as required in the context of implementing the new curriculum. This trend is supported by Good and Brophy (1989:25), who argue that "no single model is appropriate for all situations. What constitutes effective instruction varies with the subject matter, students, and other factors." Brown, Oke and Brown (1982) also aver that a variety of teaching methodologies is advisable, for at present no known single approach can work with all kinds of students or enable the achievement of all curriculum goals. However, the students' perceptions about their school performance reveal that the effectiveness of the existing variety of teaching and learning strategies needs to be optimised to ensure effective learning.

The students' positive responses to questions concerning teachers' classroom procedures and practices were as follows:

- only 68.8% agreed that their teachers listened to them individually.
- barely 65.5% agreed that their teachers understood when they had personal problems.
- just 66.5% stated clearly that their teachers knew each of them well.
- scarcely 59.8% agreed that their teachers cared about each of them.

These results support the finding recorded by Fisher, Den Brok and Rickard (2006) that close cooperation between teacher and student declines as class populations grow (hardly surprising, but overcrowding is endemic in Mozambique), and in fact the teachers stature (i.e. prestige) as a beacon that can guide students in their quest to learn diminishes. However, this study found that 75.5% of students agreed that their teachers treated them with respect, which seems to contradict the findings discussed above (see also section 7.3.2).

It is, therefore, worth reiterating that for successful curriculum implementation, it is crucial that teachers listen and talk to learners, and that they react sensitively,

intelligently and constructively to what the learners tell them (Gould, 2001). So, the teachers may help their learners to improve their school performance, to become critical thinkers and responsible citizens, who thoroughly analyze and practice in real life what they learn and experience at school.

7.3.4 The efforts which are being made towards successful implementation of the new curriculum

According to Good and Brophy (1989), the findings concerning the students' opinions about their teachers in the context of the new curriculum reveal the extent to which *teachers' positive expectation* that is manifested in their belief that their students can learn and consequently in their expectation that students will do their best at school. The findings also show the extent to which students' *supportive learning environment* is expressed in opportunities to learn and to receive appropriate encouragement, including support for their learning efforts at school, especially from the teachers.

In effect, students generally (81.7%) felt that their teachers expect them to do their best, although a slightly lower proportion (79.9%) agreed that they were doing their best at school. This finding not only reveals the level of students' commitment regarding learning activity and individual efforts of the students but also the level and effectiveness of guidance and support they receive to aid their endeavours especially from their teachers and families. Notably, only 66.1% of participating students agreed that their teachers had confidence in individual student's capacity to learn, while 71.3% agreed that their teachers were paying individual attention to them when needed. Therefore, in view of these findings, a great deal of effort should be focused on translating what students consider an achievement into a desirable learning performance.

The study also shows to some extent, how the implementation of the new curriculum for basic education in Mozambique meets the essential knowledge requirements that should be provided by primary education, namely writing, reading, arithmetic, communication and technology. Thus, the majority of participating students agreed that they were learning for the real world (writing 90.6%; reading 91.6%). While 87.9% felt that the new curriculum contributes to their education for the real world, enabling them to deal better with mathematical issues, 81.8% of the students

believed that the new curriculum helped their education by enhancing their ability to present information. However, only 72.2% agreed that the new curriculum enhanced their education for the real world by enabling them to cope with new technology. So, the findings indicate that reading and writing are perceived as skills to be mastered by every student. Regarding mathematics and communication in general (information presentation), there is a need to adopt strategies, through which the students' motivation and mastery of these subjects can be improved.

The technology findings correspond with expectations in the context of the new basic curriculum. It is important to note that:

- technology in the context of this curriculum includes arts and crafts; and
- the main objective of the new curriculum is to develop not only knowledge, but also the relevant skills and values in an integrated and interdisciplinary way (see section 1.5).

The level of importance of delivered subjects and the preferred textbooks, as discussed in section 6.5.6, reveal that special attention should be given to the approach adopted to such subjects, particularly with reference to the teaching-learning strategies applied in classroom practices in order to promote students' interest in subjects taught under the new curriculum.

It is remarkable that 20.1% of the surveyed principals implied that in their view the extent to which a conducive climate had been created in their schools by sharing and cooperation on all issues concerning effective implementation of the new curriculum had been unsatisfactory. The research shows that the success of principals' meetings with teachers on the new curriculum was questionable. Indeed, 30% of the surveyed teachers revealed that they had not been given the necessary support for the implementation of the new curriculum. This observation is in line with the finding that 15.3% of participating principals disagreed with the statement that they were making efforts to ensure good performance by students by holding regular and productive meetings on the new curriculum. These findings also suggest that even external support, that is, from ZIP (Pedagogic Influence Zone, a cluster of schools in Mozambique), DDE (District Education Office), DPE (Province Education Office) and MINED (Ministry of Education) was deficient.

7.4 REFLECTIONS ON THE FINDINGS

As stated earlier, the essential purpose of this study was to investigate the **classroom practice** within the context of Basic Education Curriculum change in Mozambique, as well as **overall school conditions** influenced by endogenous and exogenous school factors that **may affect it**.

This study contributes to the literature and analysis of curriculum implementation, particularly in Mozambique and throughout in southern Africa. The focus on classroom practice is of particular importance due to the lack of field studies carried out in the southern African region.

As reported earlier, (*cf.* Silins and Mulford, 2002:571), the relationship between variables such as effective leadership, organizational structure and learning, classroom performance of teachers and the learning of children, has been overlooked in the literature on curriculum implementation. This view is echoed by Jansen (2003:471-478) in his contention that although studies on curriculum in southern Africa cover a considerable range of important issues, they nevertheless fail to address the above-mentioned relationship, which cries out for attention.

Therefore, this research has shed light on a problem that has been outstanding for too long. It is a contribution to the critical analysis of new curriculum implementation, offering empirical evidence relevant to school resocialization in terms of restructuring and reculturing towards successful reform.

The current study explores the seven basic conditions for effective change identified by Giacquinta (1998). In the researchers' view, supported by the literature review, these conditions summarize the research findings concerning successful implementation of curriculum change. This research therefore has the merit that it relates these factors to each other, thus serving as an important guide for monitoring and implementing education change of which curriculum reform is a basic element.

With this foundation and curriculum theory in mind, the present research is focused on three distinct levels or perspectives, namely, the "intended", "implemented" and

“attained” curriculum. These levels are often confused and superficially conceived, particularly, in the case of curriculum change, hence the new curriculum will fail. Consequently, the behavioural, managerial, systems, academic, humanistic and reconceptualist curriculum approaches, among others, are succinctly explored, and accurate analysis and understanding of curriculum implementation are enabled in the process of dealing with the curriculum concept, the various perspectives on and approaches to school curriculum theory and curriculum development. In this way, and taking into account the curriculum concept, the different perspectives and approaches of school curriculum, the curriculum theory and curriculum development, an accurate analysis and understanding of curriculum implementation was undertaken.

The study indicates the need to reconsider the current teacher training strategy, especially for primary education, to ensure successful implementation of the new curriculum. In-service training cannot be effective without career incentives. Teachers are concerned with the improvement of their living conditions. Consequently, short-training courses that are not supplemented by in-service-training are doomed to failure.

In fact, while it is true that the government may be unable to offer better salary to teachers, it is also true that the teachers are working in a stressful environment for low salaries. This needs to be addressed as soon as possible to ensure effective change and a better quality of education. The initiatives that the government are currently taking to motivate the teachers and to make them more effective, such as loan schemes in agreement with the financial institutions such as commercial banks and the teachers’ health insurance scheme that translates into effective medical assistance, need to be expanded to reach more teachers.

In this research a plea is made for a productive partnership between parents (members of community around the school) and teachers in the interest of achieving education goals. This relationship between parents and teachers requires a change of attitudes and beliefs on both sides, especially from the teachers, who should open the doors, allowing the parents to become effective participants in school functioning. Such collaboration help to put an end the parents’ accusation that schools are

inefficient. It may also serve to develop a congenial and conducive school atmosphere that will promote implementation of the school curriculum and the achievement of desired results.

Participant teachers' responses observed that they lacked confidence in their ability to fulfil the requirements of the new curriculum. About 30% of the teachers indicated that they had not received the necessary support towards implementing the new curriculum.

This investigation proceeds from the premise that student learning is an active and enjoyable commitment for the student in the process of acquiring knowledge and skills grounded on prior skills or information: therefore (*cf.* Schubert, 2005) the learning process is typically *incremental and developmental* and requires sustained academic motivation, sufficient devotion of time for study, perseverance, and obviously need necessary support, especially from teachers, colleagues and parents.

A feasible strategic plan is needed in each school to meet the challenges of implementing the new curriculum. There should be clarity among members about and receptiveness to the pursuit of new goals and role expectations, to which end members should be suitably equipped with the capacity to meet the relevant challenges as noted earlier.

The results of the study show, to some extent, how implementation of the new basic education curriculum for Mozambique meets the basic primary schooling needs of writing, reading, arithmetic, communication and technology. In fact the results indicate that reading and writing are acknowledged as basic skills to be mastered by every student, followed by mathematics and communication in general (information presentation).

The findings regarding technology show that the expectations embodied in the new basic curriculum were not being realised to best advantage. Therefore, in order to achieve the goal of the new curriculum, the approach to technology should be reviewed and suitably adopted.

Textbooks are essential resources of curriculum implementation. Consider in this regard that if textbooks are not available for each student, teachers will tend to remain exclusive repositories of information or content transmitters, thus relegating students to the role of mere receivers or receptacles of knowledge. The attitude underlying this situation should be changed in order to enable student-centered learning. An important proviso in this regard is that the appropriate use of textbooks requires good preparation by the teachers.

Real change translates into a positive school climate achieved by means of effective teaching and learning, innovative classroom practices and effective school leadership.

In a nutshell, successful implementation of curriculum change in Mozambican schools will depend on fulfilment of the seven basic conditions for effective change, as identified by Giacquinta (1998): The conditions are as follows:

- For principals:
 - Leadership and capacity building
 - Innovative classroom practices
- For teachers:
 - Leadership and rewarding
 - Innovative classroom practice and capacity building
- For students:
 - Student expectations, learning opportunities and outcomes
 - Subject preference
 - Friendly and supportive environment.

It was clear from participating principals' and teachers' responses that school leadership is an essential factor in assuring the presence and maintenance of all necessary conditions for successful implementation of the new curriculum. The school, through its leadership, must have a shared vision, translated into a feasible plan based on the values and beliefs of school staff, parents and the broader community, reflecting clarity among members and stakeholders about receptiveness to the pursuit of new goals and role expectations.

Bernhardt (1999) and Schubert (2005) realized that the major elements of change are internal rather than external, requiring a transformation of all individuals' thinking about school, students, teaching and learning. Thus, the whole chain of change should be school based as a unit. For that, a strong school leadership is needed to stimulate and sustain high levels of student motivation, and of enthusiasm among school staff, especially teachers who are expected to display sincere commitment to achievement of the new curriculum goals.

Bernhardt (1999:84) remarks that “the lack of enthusiasm is often replaced by cynicism. While teachers need the opportunity to be cathartic, leadership needs to keep staff positive, perhaps by celebrating how far they have come already.” It is striking that in Bernhardt's view school leadership is closely linked to teachers' enthusiasm. Its primary function is to keep staff positive by instilling confidence in teachers that they will be able to live up to the new role expectations, avoiding cynicism. Instead of falling pray to cynicism teachers should commit themselves to successful implementation of the new curriculum and working in a collaborative setting, seeing all obstacles as challenges. Moreover, Bernhardt (1999) emphasizes that teachers need the opportunity to be cathartic, that is, to openly express strong feelings related to their work or daily life, suggesting regular and constructive review of the state of school affairs, exemplified in the wholesale overhaul of curriculum. In this regard, rewarding from teachers' perspective is an important component of school leadership over and above mere monetary considerations.

Another indispensable factor derived from participating principals' and teachers' responses concerning successful implementation of the new curriculum, is capacity building, which is viewed as an important condition for creating and maintaining teachers' confidence in their ability to fulfil new role expectations.

According to Monyokolo and Potenza (1999:237), “the point is that unless teachers are properly trained and supported and unless they develop a sense of ownership of the process, the implementation of the new curriculum will simply not be realized.” In similar vein, Schubert (2005: 64) emphasizes that teacher development is at the heart of the improvement process; improved school management and organization is essential to support teachers' capacity to implement. Schubert (2005) also underlines

the role of school leadership in building teachers' capacity towards successful implementation of the new curriculum.

In addition, principals and teachers identified innovative classroom practices as an important condition for successful implementation of the new curriculum.

On the one hand principals' responses showed that it is important to recognise the association between leadership, innovative classroom practices and capacity building, while on the other hand participating teachers' responses show that there is an equally important link between capacity building and leadership, rewarding and innovative classroom practices.

An important factor for successful implementation of the new curriculum that emerged from participating students' responses comprises an association of students' expectations, learning opportunities and outcomes. On the one hand, this finding is in line with the following assertion by Good and Brophy (1989:33):

It is important to realize that the levels of success that students are likely to achieve on a particular task depend not only on the difficulty of the task itself, but on the degree to which the teacher prepares them for that task through advance instruction and assists their learning efforts through guidance and feedback.

On the other hand, this finding is consistent with the following assertion by Slavin (1989:10):

Incentive is high when the level of instruction is appropriate for a student, so that the student perceives that with effort the material can be mastered, so that the payoff for effort is perceived to be great.

Another finding derived from students' responses, shows that successful implementation is linked to student's subject preferences. In this regard, the main lesson learned is that not every subject can be made intrinsically interesting to every student at all times. Most students need some sort of extrinsic incentive to exert an adequate level of effort. The teachers' guidance of learning may exert a major influence on students' subject preferences.

Finally, the students' responses confirmed the results of studies undertaken by Good and Brophy (1989), in which it is shown that a friendly and supportive environment is a distinct enabling condition for successful change.

7.5 LIMITATIONS OF THE STUDY

As indicated, the purpose of the study was to trace the first year of progress made towards implementing the new curriculum for basic education in Mozambique. From the previous researches it is known that most changes in education achieve a high level of implementation, at least, after three to five years (Hall & Hord, 2001; Fullan, 2001; Bernhardt, 1999). Therefore, many findings may indicate that the introduction of the new curriculum made little difference in the course of the first year of implementation when compared with the period prior to curriculum change. Consequently, the depressing conclusion that the new curriculum does not work could be drawn or, given the short period since inception, it may be concluded that it was too early for this kind of study to produce significant results. However, it was felt that the availability of resources, synergies, support and commitment to implementation of the new curriculum should be tracked from the outset despite the knowledge that the desired impact will only be visible at a later time. Fullan (2001:67) asserts that "poor beginnings can be turned into success depending on what is done during implementation. Promising start ups can be squandered by what happens afterward." Therefore, the process of monitoring curriculum implementation should start right at the beginning and continue each year so that adjustments can be made in good time when needed to achieve successful curriculum change.

This study consisted mainly of a survey of educators' and learners' opinions concerning endeavours to implement the envisaged new Basic Education Curriculum in Mozambican schools in three selected provinces, Niassa, Sofala and Maputo City. Broussard (2002:71) rightly observes "each student is different, and each situation is unique and must be handled with lots of thought." In spite of this uniqueness of individual situations, as shown in the current study, common features may be identified from which factors could be extracted that were bound to impact positively or negatively on the curriculum implementation. However, proper heed should be paid to Fullan's (2001:71) warning that: "we should avoid thinking of sets of factors in

isolation from each other. They form a *system of variables* that interact to determine success or failure.”

As noted by Cramer (2003) and Garson (2006), the actual confirmatory factor analysis can be conducted with the aid of several structural equation modeling packages (computer programs) such as AMOS or LISREL. In this report, the confirmatory maximum likelihood factor analysis was undertaken as a reasonable alternative due to technical constraints (explained in section 5.6).

7.6 RECOMMENDATIONS

7.6.1 Revitalization of schools' support local system

A team of teachers, including retirees should be nominated to work permanently at resource centres linked to ZIP as a voluntary (but remunerative) collegial support base covering all curricular areas of basic education, selected on the basis of their acknowledged pedagogical expertise, judged according to the academic competence displayed by their learners.

The members of this support team should work together and share their expertise on the new curriculum. In this context, the team should be involved in the production of the content of framework of basic education, syllabi, textbooks and other documents produced at central, provincial or district level. They should visit schools of their ZIP and assist the teachers. Since the resource-centre team have to act as change agents they should know as Lieberman (2001:161) states: “how to build trust, organize, manage, and empower groups” with a view to ensuring that the new curriculum is debated and critically implemented in every school. According to Richert, Stoddard and Kass (2001:38), the purpose is “to turn our schools into learning organizations that promote and support the learning of children and adults”. The schools could, therefore, rely on systematic and regular external support, especially from the ZIP resource centre, while developing a strong partnership internally, thus establishing a collaborative partnership with a view to optimally realising curriculum goals. In matters of curriculum implementation, Mahomed (1999) emphasizes the need to turn obstacles into challenging opportunities. In fact,

sustained cooperation towards acquiring new teaching skills is the key to success. Mentz and Xaba (2007:43) note that “a spirit of investigation should be developed and an open mind kept accommodating any kind of solution to existing problems.”

The number of teachers in each local support team at ZIP should be defined in accordance with the extension of ZIP, the geographical location of schools and their proximity to the resource centre. Ideally, each ZIP should have more than one resource center whenever justifiable, in such a way to ensuring systematic and regular contact with schools.

The ZIP resource-centre teams should establish a partnership with teacher training institutions and they could also act as supervisors of student teachers during the practical teaching term. So, effective development of ZIP resource centers not only could contribute towards revitalizing the role of the ZIPs but would also solve the problem of trainee supervision during the practical term. Indeed, it has already been discovered that an effective teacher education course depends on a strong relationship between teachers training institutions and schools (Down, Hogan & Madigan, 1995). Moreover, the ZIP resource- centre teams should be functionally linked with district and provincial supervisory and inspectorate bodies that could serve as conduits for liaison with central government.

7.6.2 Training and upgrading of school principals

In addition to the management skills necessary for administrative duties, school principals should be trained to manage school curriculum, since the main purpose of their institutions is to ensure effective teaching and learning (Middlewood, 2001). The work with parents, communities and stakeholders in general also needs particular attention to be addressed in the training and upgrading of school principals. The ZIP resource-centre teams should work closely with school principals and organize regular meetings to discuss particular problems and share knowledge and experiences about school resocialization in terms of *restructuring*, *retiming* and *reculturing* towards effective realisation of curriculum goals (see section 1.6.5).

7.6.3 Initial and in-service training of teachers

Extension of the current one-year preparatory training courses for primary education should be considered.

If these courses are maintained in view of education millennium goals, then the trainees should be divided into two groups, one to teach Grades one to five and the other to teach Grades six and seven. Due to the complexity of the curriculum content for Grades six and seven, and contingent on trainees' wishes and inclinations, the group should be divided into subgroups centred on certain subjects, for instance Mathematics, Natural Sciences and Physical Education or English, Technology and Visual/Aesthetic Education. The training methodologies applied during the course should help the trainees to become familiar with effective teaching strategies. The aim is to ensure that the trainees are well prepared for successful fulfillment of their role as teachers, including the mastery of curricular content that they will teach. Lovat and Smith (2003:74) insist that "the quality of student learning outcomes is directly dependent on the quality of the teacher and essential components of effective teaching are command of subject, and knowledge of and capacity to implement effective pedagogical practices."

In-service training should be undertaken within the school as a collaborative endeavour, that is, in close partnership with the ZIP resource-centre team. Indeed, Grose (2001:80) correctly comments: "The history of education reform shows that educators at all levels participate in workshops on 'best practices', but rarely have the ongoing support to integrate these new practices into day-to-day lives in the school – as principals, teachers, or other school personnel." So, the proposed in-service training strategy facilitated by the ZIP resource-centre team and learning communities built within schools, is aimed at ensuring that ongoing school support is appropriately linked to teachers' real professional-development needs.

That is to say, it is envisaged that the suggested training strategy will contribute to improved teaching practices, thus ensuring effective schooling.

7.6.4 School resources provision

Tedesco (1997) argues that the crisis in education resides in the link between quality and quantity, rather than in the quality of education itself. On the same tack, Sedel (2005) observes that the problems of quality in basic education in most African countries are attributable to a scarcity of resources for education and inefficient use of the available resources. According to Burton (2001:60), “the more efficiently resources can be used, the greater curriculum provision can be”. Steyn (2007) emphasizes that effective education may be understood in terms of four interactive dimensions: inputs, process, outputs and outcomes. Inputs limitations and/or process imply limitations on outputs and outcomes. (It is worth noting that inputs are the resources needed for the education process, including school characteristics and facilities, educators’ characteristics (personality traits), availability of teachers, quality of training, age/experience; and the characteristics and needs of learners — abilities, attitudes, interests, socio-economic backgrounds, home language). The education process transforms educational inputs into measurable outputs, observable as the direct and immediate impact of the education process — acquisition of knowledge and skills, and behavioural change in learners. Outcomes are the impact of the education process shown by school leavers’ state of preparedness for further education or training or for remunerative employment including self-employment. (Burton, 2001:59) avers that “restrictions on educational resources may affect the curricular provision that the institution is able to offer. Institutional plans for the curriculum will need to be constructed within the constraints of resources availability.”

Briggs (2001:176) points out that “the physical environment — the building and the resources within it — contributes directly to a climate conducive to learning”. So, the provision and efficient use of resources are a basic condition for successful curriculum implementation (see section 1.6.3).

7.6.5 Topics for further studies

The following topics are recommended for further studies to be conducted as action research projects with a view to promoting the establishment of learning communities in schools with the support of ZIP resource-centres acting in liaison with faculties of

education at universities and teacher training institutions as a strategy to ensure effective collaborative change as proposed in the present study:

- Adding value to the teaching profession and financial constraints: impact of new approaches.
- The new role of supervision and inspectorate bodies at different levels in coordination with ZIP resource-centres in schools.
- Parental involvement in school initiatives for increasing students learning achievements.
- The use and quality of textbooks in official use under the new curriculum.
- Experiences of development of local curriculum and its implementation at school level.
- Lessons learned from positive experiences of semi-automatic promotion of learners.

The action research method is suggested because it includes three inseparable elements: research, participation and action (Greenwood & Levin, 1998). So, the researchers from INDE, faculties and teacher education institutions could serve as facilitators (researchers) while the ZIP teams and school teachers could be participants (co-researchers). In this regard, the research is not end in itself, but must be followed by action that is conducive to desired change and improvement. In other words, as McNiff and Whitehead (2006) note, action research is a “process of *observe-reflect-act-evaluate-modify-move in new directions*” or a participatory “*action-reflection*” process.

7.7 IMPLICATIONS

The revitalization of schools’ local support system as recommended above implies a redefinition of the ZIP Supervision and Inspectorate bodies’ role, establishment or improvement of ZIP resource centres, reconsideration of staff involved and duly integrated accommodation of the ZIP function within their education careers. In this regard, a clear understanding is required that curriculum implementation is not a linear process. Curriculum implementation is a complex and dynamic web of interactions implying vision, knowledge and skills, investment of time and money,

hard work and perseverance. The school as the primary unit for change must do a lot by itself. However, effective school support coming from other components of the education system is essential (Fullan, 2001; Hall & Hord, 2001; Bernhardt, 1999).

In addition, society as a whole, with a view to developing the entire country must prioritize investment in the education sector. Still in this context, given the pivotal role played by the teacher in the curriculum change process, employment, careers, teaching and learning conditions should be revisited with a view to making teaching profession more attractive and to retain the services of qualified teachers. With this aim, the Education Sector Strategic Plan (1999-2003) and the 2005 Pretoria Declaration on Teachers following the Southern African Policy Dialogue Forum on Teachers for the Future provide valuable hindsight in this regard. Above all, it is crucial to reconsider the issue of a low wage ceiling, especially for the education sector where wages are ostensibly cubed to ensure low inflation and macroeconomic stability. As Mendonça and Moussié (2007:39) rightly aver, it is important to “consider teachers and health workers as a long term investment rather than a recurrent cost. Consequently, the level of the wage ceiling should reflect staffing and pay levels that are sustainable and consistent with their national education goals.” House (2000:15) notes that “the mistake is not one of applying economic concepts to education but of applying them badly, without understanding the effects they are likely to have.”

It has been claimed that the alignment between curriculum development, teacher development and learning materials is consolidated with the active involvement of teachers through ZIP resource-centres. INDE, as the national institution entrusted by the Ministry of Education and Culture with the function of curriculum development, must therefore be involved so that:

- ZIP resource-centres can perform their supporting role for the maximum benefit of schools, creating an environment that produces reflective teachers in terms of self-evaluative teaching and learning experiences that will help to improve their classroom practices.
- ZIP resource-centre can help schools to analyze the official textbooks and use them critically in context with the new curriculum.
- ZIP resource-centres can become a bridge that links INDE with teacher training institutions (including faculties of education and schools) to ensure

effective monitoring, support and in the final analysis education of good quality.

School principals should be regarded not only as school administrators or managers, but also as curriculum leaders. In effect, since the main function of schools is to ensure effective learning, those who are appointed as school principals should be familiar with the school purposes, to which their managing role should be oriented. The criterion of selecting principals from teachers who maintain the best classroom practices, as well as good interpersonal relationships by virtue of their communication ability and cultural sensitivity, is consistent with the above statement. However, it is important to ensure that all principals are prepared to meet the obligations of their school leadership role, to best advantage, not only through induction workshops and courses, but also by providing clear guidance (basic school norms, syllabi and other legislation) as well as the opportunity to share school leadership experiences, for instance at ZIP level. A constant turnover of school principals is not advisable for good and effective school functioning as such discontinuity undermines school leadership. Excepting unavoidable cases, a principal should remain with the same school for at least five years.

A coherent and consistent policy for initial and in-service teacher training is needed with a view to ensuring that current and future teachers receive adequate training and upgrading so that justice can be done to the critical strategic importance of the teaching profession and that education of good quality can be maintained in Mozambique. Naturally such policy will have to be devised and executed with the consideration of the economic constraints referred to above. As with ZIP resource agents, particular attention must be paid to the selection of trainers of trainees. Similarly, school resource provision and school physical conditions require due attention, which implies a clear specification and requisitioning of basic infrastructure and equipment, including prescriptive guidelines for their adequate use. In this regard, it is important to recall the observation by Glatthorn, Boschee and Whitehead (2006) that through the hidden curriculum students can learn both desirable and undesirable things, hence the importance of a good school environment.

7.8 SUMMARY

In general, contemporary curricula have been created eclectically, by mixing a variety of approaches. Specifically, the new basic education curriculum of in Mozambique presents features of different approaches.

Among other measures, the strategies for implementing the new curriculum include: the construction and expansion (upgrading to “complete” status) of primary schools; upgrading of teachers’ qualifications; initial teacher training; and support for schools’ endeavours to implement the new curriculum.

The only possible weakness, if at all, that may have detracted from the effectiveness of the study, was the brevity of the review period of one year into the beginning phase of the practical implementation of the new curriculum in schools across the nation.

With reference to learners’ perceptions of school and learning, the following key factors were derived from quantitative analysis, aligned with factor analysis as a result of learners’ responses to the research questionnaire:

- Friendly and supportive school environment;
- Student attitude to learning activity;
- Curriculum relevancy to real life and self-learning motivation; and
- Subject content of the curriculum.

Concerning perceptions of educators, using quantitative and factor analyses supported by the relevant literature on curriculum implementation, especially on the role of teachers, the following key factors were determined:

- Leadership and rewarding;
- Innovative classroom practices and capacity building.

The attitudes of the surveyed schools principals regarding their leadership role in the process of curriculum implementation in their schools were highly positive. The principals were able to identify the responsibilities for which they wanted better guidance and support from ZIP, the District Office and other higher hierarchical levels

towards successful implementation of the new curriculum. Thus, by the quantitative analysis in alignment with factor analysis of the perceptions of principals regarding the new curriculum and the findings of the previous studies reflected in the literature on curriculum implementation — particularly concerning the role of principals in curriculum implementation — the research led to the following key factors:

- Leadership and capacity building;
- Innovative classroom practices.

The results of the study show, to some extent, how the implementation of the new curriculum of basic education in Mozambique meets the primary education requirements in the critical areas of writing, reading, arithmetic, communication and technology. A concerted effort should be made to translate what students consider to be academic achievement into desirable learning performance. The following recommendations were considered apposite for successful curriculum implementation:

- Revitalization of schools' support local system;
- Training of school principals and upgrading of their expertise;
- Initial and in- service training of teachers;
- School resources provision.

The broad implication of the above recommendations is that there is an urgent need to review the conditions of employment and careers, prospects of teachers, as well as the teaching and learning conditions prevailing at schools, with a view to making the teaching profession more attractive and to avoid undue turnover of qualified teachers.

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³⁰ UDEBA-LAB (Laboratory Unity of Development of Basic Education based in Gaza province) is a technical, scientific, cultural and social association that not operates profitably. It aggregates all stakeholders aiming to developing basic education in Mozambique and is sponsored by the kingdom of the Netherlands under a contract basis.

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**FACTORS INFLUENCING THE IMPLEMENTATION OF THE
NEW BASIC EDUCATION CURRICULUM IN MOZAMBICAN
SCHOOLS**

by

Mucavele, Simão

Appendices

Presented in partial fulfillment of the requirement for the

Philosophiae Doctor (PhD) in Education Policy Studies

in the

Department of Education Management and Policy Studies

Faculty of Education

at the

UNIVERSITY OF PRETORIA

Supervisor: Prof W J Fraser

October 2008

INTRODUCTORY NOTE

It should be considered that in this study the analysis of data commenced with a simple descriptive and frequency analysis of the responses, which was followed by a factor analysis. As mentioned in the introduction of chapter five of this report, a total of 109 items were examined: 14 items for principals, 20 for teachers and 75 for learners. A comparative table in and across the three relevant provinces of the study was produced for each item. Due to the tables reflecting disaggregated items as the results of the frequency analysis, the bulk of the text of the research report could become too voluminous. Therefore, the researcher choose to include only the most essential data in the main text of the thesis, and to relegate the rest to a separated volume of appendices with a view not only to ensure a friendly and manageable report, but also to facilitate access to comprehensive information.

The volume of appendices includes the cover letter (Appendix A) in which the respondents were requested to collaborate in the research and explained the purpose of the study, the research instrument in the English version (Appendix B), the applied research instrument in schools in the Portuguese version (Appendix C), the principals' reliability analysis of scale (Appendix D1), the associated tables regarding "the school principals' attitudes to their leadership role in the process of curriculum implementation in their schools" (Appendix D2; Appendix D2a — after merging cells together with an expected frequency less than 5), the teachers' reliability analysis of scale (Appendix E1), the relevant tables concerned with "the attitudes and beliefs of participating teachers towards the implementation of the new curriculum" (Appendix E2; Appendix E2a — after merging cells together with an expected frequency below 5), the students' reliability analysis of scale (Appendix F1) and the associated tables with reference to "perceptions, beliefs and attitudes of learners regarding the new curriculum" (Appendix F2).

Maputo, 11th April 2005

Dear Respondent,

<p style="text-align: center;">The Implementation of a New Basic Education Curriculum in Mozambican Schools</p>
--

You are requested to collaborate with us in a critical appreciation of the implementation of the New Basic Education Curriculum, in Mozambican Schools. Your sincere opinion will certainly enable us to undertake a rigorous analysis of the new curriculum implementation process. This is not a simple academic exercise, but, above all, an act of reflection aiming at the identification of factors contributing for success or failure in the implementation of the new basic education curriculum. This knowledge may allow for timely undertaking of pertinent measures towards successful implementation of the new basic education curriculum.

Thus, this questionnaire is intended to be answered by school principals, teachers and pupils.

For school principals, the aim of the questionnaire is to elicit the school leadership impact namely the relationships with: teachers, other staff members, students and parents; clarity among all school members about new goals and role expectations and their receptiveness to implement the new goals and role expectations in the context of the new curriculum common vision; coordination and management of implementation of the new curriculum, etc as well as the school restructuring and re-culturing (compatible organizational measures to meet the requirements of new curriculum, sharing and cooperation work schemes, etc.)

For teachers, the aim of the questionnaire is to explore teachers' beliefs and attitudes about school environment, organization, new curriculum and teaching as well as student learning; teachers ability and confidence to fulfill the requirements of the new curriculum: capacity building; collaboration with parents and other stakeholders.

For pupils, the aim of the questionnaire is to assess student beliefs and attitudes about school and learning, relationships students/teachers, students' expectations, students learning resources and students outcomes, in short, to understand to what extent the new curriculum enables an effective and relevant learning for pupils.

Thank you in advance for your support.

The Researcher: Simão Mucavele



A. Biographical information

1. Respondent Number

V1 1-4

2

Respondents	
Principals	1
Teachers	2
Students/ Learners	3

V2 5

Gender	
Male	1
Female	2

V3 6

3. In which of the following provinces is your school located?

Provinces	
Niassa	1
Sofala	2
Maputo City	3

V4 7

4. **Principals AND Teachers** only must complete this question.

Academic Qualifications	
Primary Education Qualifications	1
Junior Secondary Education Qualif.	2
Senior Secondary Education Qualif.	3
Higher Education Qualification	4

V5 8

5. Principals **ONLY** must complete the following two questions (5.1 and 5.2).

5.1

Training in School Management	
Regular/ Formal programmes	1
Self-Training	2
Induction workshop	3

V6 9



5.2

Number of years Managing School	
1-5 Years	1
6-10 Years	2
11-15 Years	3
16 Years and more	4

V7

10

6. Teachers **ONLY** must complete the following two questions (6.1 and 6.2)

6.1

Pedagogical Qualifications	
CFPP Teacher Training	1
IMP Teacher Training	2
IMAP Teacher Training	3
UEM (Education Faculty certificate)	4
Higher Education 1	5
Higher Education 2	6
Other qualifications	7 ...

V8

11-12

6.2

Nr. of Years Teaching EP2	
1-5 Years	1
6-10 Years	2
11-15 Years	3
16 Years and more	4

V9

13



B. The attitudes of school principals (school leadership impact of new curriculum: clarity among all school members about and receptivity to do new goals and role expectations in the context of new curriculum; common vision; coordination and management of implementation of new curriculum, etc. as well as the school restructuring and re-culturing - compatible organizational measures to meet the requirements of new curriculum, sharing and cooperation work schemes, etc.) **towards the new curriculum.**

7. Principals ONLY should answer section B.

Deciding on the rating scale that best describes your situation. Please use the following codes when responding to the questions:

1= Strongly Disagree; 2= Disagree; 3= Neutral; 4= Agree; 5=Strongly Agree

7.1 I try to promote student achievement under the new curriculum,								
7.1.1	by cultivating close relationship with teachers, other staff members, students and parents.	1	2	3	4	5	V10	<input type="text"/> 14
7.1.2	putting in place an action plan produced collectively in school for effective implementation of new curriculum.	1	2	3	4	5	V11	<input type="text"/> 15
7.1.3	by effective professional development on new curriculum.	1	2	3	4	5	V12	<input type="text"/> 16
7.1.4	by challenging teachers and students continuously to fulfill curriculum goals.	1	2	3	4	5	V13	<input type="text"/> 17
7.1.5	by holding regular and productive staff meetings.	1	2	3	4	5	V14	<input type="text"/> 18
7.1.6	by coordinating and managing learning process.	1	2	3	4	5	V15	<input type="text"/> 19
7.1.7	by promoting collaboration among teachers so that they can develop new skills by sharing professional knowledge about the new curriculum.	1	2	3	4	5	V16	<input type="text"/> 20
7.1.8	by monitoring continuously teachers performance.	1	2	3	4	5	V17	<input type="text"/> 21
7.1.9	by maximizing the amount of school time used for learning.	1	2	3	4	5	V18	<input type="text"/> 22



7.2		I am satisfied that						
7.2.1	new school organization is being implemented to cope with the requirements of new curriculum.	1	2	3	4	5	V19	<input type="text"/> 23
7.2.2	teachers are diligent in their endeavour to observe interdisciplinarity principle in the lessons plans they make according to the new curriculum.	1	2	3	4	5	V20	<input type="text"/> 24
7.2.3	the school climate is exemplified by sharing and cooperation that conduce to effective curriculum implementation.	1	2	3	4	5	V21	<input type="text"/> 25
7.2.4	teachers are using a variety of active methods in their teaching as required by the new curriculum.	1	2	3	4	5	V22	<input type="text"/> 26
7.2.5	the school has already developed the local curriculum.	1	2	3	4	5	V23	<input type="text"/> 27

C. Teachers beliefs and attitudes about school environment, organization, capacity building, collaboration with parents and other stake holders, new curriculum and teaching as well as student learning; teachers ability and confidence to fulfill the requirements of new curriculum.

8. Teachers ONLY should answer section C.

Deciding on the rating scale that best describes your situation. Please use the following codes when responding to the questions:

1= Strongly Disagree; 2= Disagree; 3= Neutral; 4= Agree; 5=Strongly Agree

8.1		I feel						
8.1.1	like I belong at this school.	1	2	3	4	5	V24	<input type="text"/> 28
8.1.2	that school organization is changing and enabling successful implementation of new curriculum.	1	2	3	4	5	V25	<input type="text"/> 29
8.1.3	that teaching new curriculum is fun at this school.	1	2	3	4	5	V26	<input type="text"/> 30
8.1.4	acknowledged for good work in the context of the new curriculum.	1	2	3	4	5	V27	<input type="text"/> 31
8.1.5	intrinsically rewarded for doing my job well in the context of new curriculum.	1	2	3	4	5	V28	<input type="text"/> 32
8.2		I work with colleagues who						
8.2.1	treat me with respect.	1	2	3	4	5	V29	<input type="text"/> 33
8.2.2	listen if I have ideas about doing things better in the context of new curriculum.	1	2	3	4	5	V30	<input type="text"/> 34



8.3	My principal/ principal assistants/ learning cycle leader, learning area coordinator							
8.3.1	is an effective instructional leader.	1	2	3	4	5	V31	<input type="text"/> 35
8.3.2	facilitates communication effectively.	1	2	3	4	5	V32	<input type="text"/> 36
8.3.3	supports me in my work with students under the new curriculum.	1	2	3	4	5	V33	<input type="text"/> 37
8.3.4	supports shared decision making.	1	2	3	4	5	V34	<input type="text"/> 38
8.3.5	allows me to be an effective instructional leader.	1	2	3	4	5	V35	<input type="text"/> 39
8.3.6	is effective in helping us to realize the vision on which the new curriculum is predicated.	1	2	3	4	5	V36	<input type="text"/> 40
8.4	I realize that							
8.4.1	the new curriculum has clear learning objectives and that it emphasizes the acquisition of basic skills.	1	2	3	4	5	V37	<input type="text"/> 41
8.4.2	effective professional development is helpful in fulfillment of curriculum goals.	1	2	3	4	5	V38	<input type="text"/> 42
8.4.3	student achievement can increase through active learning methods.	1	2	3	4	5	V39	<input type="text"/> 43
8.4.4	student achievement data are an important tool for improvement of student learning.	1	2	3	4	5	V40	<input type="text"/> 44
8.4.5	effective parent involvement and other stakeholders is needed for successful implementation of the new curriculum.	1	2	3	4	5	V41	<input type="text"/> 45
8.5	I have the opportunity to							
8.5.1	develop my teaching skills individually and co-operating with other colleagues on the new curriculum.	1	2	3	4	5	V42	<input type="text"/> 46
8.5.2	grow professionally under the new curriculum dispensation.	1	2	3	4	5	V43	<input type="text"/> 47



D. The effects of the curriculum on learners and learning in terms of student beliefs and attitudes about school and learning, relationships students/teachers, students expectations, students learning resources and students outcomes.

9. Students ONLY should answer section D.

Deciding on the rating scale that best describes your situation. Please use the following codes when responding to the questions:

1= Strongly Disagree; 2= Disagree; 3= Neutral; 4= Agree; 5=Strongly Agree

9.1	I feel safe at this school.	1	2	3	4	5	V44	<input type="text"/>	48
	I feel like I belong at this school.	1		3	4	5	V45	<input type="text"/>	49
9.2	I feel challenged at this school	1	2	3	4	5	V46	<input type="text"/>	50
9.3	I understand how to apply what I learn to real life/ situations.		2	3	4	5	V47	<input type="text"/>	51
9.4	Teachers encourage me to asses the quality of my own work.		2	3	4	5	V48	<input type="text"/>	52
9.5	I assess my own work.	1	2	3	4	5	V49	<input type="text"/>	53
9.6	Teachers treat me with respect.	1	2	3	4	5	V50	<input type="text"/>	54
9.7	School administrators treat me with respect.	1	2	3	4	5	V51	<input type="text"/>	55
9.8	I am treated with respect by the office staff	1	2	3	4	5	V52	<input type="text"/>	56
9.9	Other students at this school treat me with respect.	1	2	3	4	5	V53	<input type="text"/>	57
9.10	The people responsible for what I learn are my teachers.	1	2	3	4	5	V54	<input type="text"/>	58
9.11	The work at this school is challenging.	1	2	3	4	5	V55	<input type="text"/>	59
9.12	I find what I learn in school to be relevant to real life.	1	2	3	4	5	V56	<input type="text"/>	60
9.13	I feel successful at school.	1	2	3	4	5	V57	<input type="text"/>	61
9.14	I am personally responsible for what I learn.	1	2	3	4	5	V58	<input type="text"/>	62
9.15	Schooling is fun here.	1	2	3	4	5	V59	<input type="text"/>	63
9.16	I like this school.	1	2	3	4	5	V60	<input type="text"/>	64
9.17									



9.18	I think this is a good school	1	2	3	4	5	V61	<input type="text"/>	65
9.19	I like to learn	1	2	3	4	5	V62	<input type="text"/>	66
9.20	Doing well in school makes me feel good about myself	1	2	3	4	5	V63	<input type="text"/>	67
9.21	I am doing my best in school	1	2	3	4	5	V64	<input type="text"/>	68
9.22	Students at this school have opportunities to learn from each other	1	2	3	4	5	V65	<input type="text"/>	69
9.23	Students at this school have opportunities to learn about each other	1	2	3	4	5	V66	<input type="text"/>	70
9.24	Participating in extracurricular activities is important to me	1	2	3	4	5	V67	<input type="text"/>	71
9.25	Students at this school respect other students who are different than they are	1	2	3	4	5	V68	<input type="text"/>	72
9.26	My teachers								
9.26.1	expect students to do their best.	1	2	3	4	5	V69	<input type="text"/>	73
9.26.2	expect me to do my best.	1	2	3	4	5	V70	<input type="text"/>	74
9.26.3	understand when students have personal problems.	1	2	3	4	5	V71	<input type="text"/>	75
9.26.4	help me gain confidence in my ability to learn.	1	2	3	4	5	V72	<input type="text"/>	76
9.26.5	have confidence in me.	1	2	3	4	5	V73	<input type="text"/>	77
9.26.6	know me well.	1	2	3	4	5	V74	<input type="text"/>	78
9.26.7	listen to my ideas.	1	2	3	4	5	V75	<input type="text"/>	79
9.26.8	care about me.	1	2	3	4	5	V76	<input type="text"/>	80
9.26.9	make learning fun.	1	2	3	4	5	V77	<input type="text"/>	81
9.26.10	are excited about they subjects they teach.	1	2	3	4	5	V78	<input type="text"/>	82
9.26.11	give me individual attention when I need it.	1	2	3	4	5	V79	<input type="text"/>	83



9.27	The new curriculum will contribute to my education in reference to my ability							
9.27.1	to write.	1	2	3	4	5	V80	<input type="text"/> 84
9.27.2	to read.	1	2	3	4	5	V81	<input type="text"/> 85
9.27.3	with Mathematics.	1	2	3	4	5	V82	<input type="text"/> 86
9.27.4	to present information.	1	2	3	4	5	V83	<input type="text"/> 87
9.29.5	to cope with technology.	1	2	3	4	5	V84	<input type="text"/> 88
9.28	In the teaching of the new curriculum, time is spent							
9.28.1	listening to the teacher talk.	1	2	3	4	5	V85	<input type="text"/> 89
9.28.2	in whole-class discussions with the teacher.	1	2	3	4	5	V86	<input type="text"/> 90
9.28.3	working in small groups.	1	2	3	4	5	V87	<input type="text"/> 91
9.28.4	reading.	1	2	3	4	5	V88	<input type="text"/> 92
9.28.5	answering questions from a book or worksheet.	1	2	3	4	5	V89	<input type="text"/> 93
9.28.6	analyzing individual or class performance.	1	2	3	4	5	V90	<input type="text"/> 94
9.29	I work well under the new curriculum when							
9.29.1	I am working in projects or research.	1	2	3	4	5	V91	<input type="text"/> 95
9.29.2	the teachers are leading discussions with the whole class.	1	2	3	4	5	V92	<input type="text"/> 96
9.29.3	I am working in small group.	1	2	3	4	5	V93	<input type="text"/> 97
9.29.4	I am working by myself	1	2	3	4	5	V94	<input type="text"/> 98
9.30	I think that the important subjects are:							
9.30.1	Portuguese	1	2	3	4	5	V95	<input type="text"/> 99
9.30.2	Local language	1	2	3	4	5	V96	<input type="text"/> 100
9.30.3	English	1	2	3	4	5	V97	<input type="text"/> 101



9.30.4	Social Sciences	1	2	3	4	5	V98	<input type="checkbox"/>	102
9.30.5	Moral and Civic Education	1	2	3	4	5	V 99	<input type="checkbox"/>	103
9.30.6	Mathematics	1	2	3	4	5	V100	<input type="checkbox"/>	104
9.30.7	Natural Sciences	1	2	3	4	5	V101	<input type="checkbox"/>	105
9.30.8	Crafts/Arts	1	2	3	4	5	V102	<input type="checkbox"/>	106
9.30.9	Visual/ Aesthetic Education	1	2	3	4	5	V103	<input type="checkbox"/>	107
9.30.10	Music Education	1	2	3	4	5	V104	<input type="checkbox"/>	108
9.30.11	Physical Education	1	2	3	4	5	V105	<input type="checkbox"/>	109
9.31	My preferred textbooks are:								
9.31.1	Portuguese textbook	1	2	3	4	5	V106	<input type="checkbox"/>	110
9.31.2	Local language textbook	1	2	3	4	5	V107	<input type="checkbox"/>	111
9.31.3	English textbook	1	2	3	4	5	V108	<input type="checkbox"/>	112
9.31.4	Social Sciences textbook	1	2	3	4	5	V109	<input type="checkbox"/>	113
9.31.5	Moral and Civic Education textbook	1	2	3	4	5	V110	<input type="checkbox"/>	114
9.31.6	Mathematics textbook	1	2	3	4	5	V111	<input type="checkbox"/>	115
9.31.7	Natural Sciences textbook	1	2	3	4	5	V112	<input type="checkbox"/>	116
9.31.8	Crafts/ Arts textbook	1	2	3	4	5	V113	<input type="checkbox"/>	117
9.31.9	Visual/ Aesthetic Education textbook	1	2	3	4	5	V114	<input type="checkbox"/>	118
9.31.10	Music Education textbook	1	2	3	4	5	V115	<input type="checkbox"/>	119
9.31.11	Physical Education textbook	1	2	3	4	5	V116	<input type="checkbox"/>	120
9.32	Beyond my textbooks,								
9.32.1	I read other books;	1	2	3	4	5	V117	<input type="checkbox"/>	121
9.32.2	I don't read other books.	1	2	3	4	5	V118	<input type="checkbox"/>	122



Apendix C

A. Informação Biográfica

1. Respondente número

V1 1-4

2

Respondentes	
Directores	1
Professores	2
Alunos	3

V2 5

Género	
Masculino	1
Feminino	2

V3 6

3. Em que Província se localiza a sua escola?

Províncias	
Niassa	1
Sofala	2
Maputo Cidade	3

V4 7

4. Só os **Directores E professores** devem responder à esta questão.

Qualificações Académicas	
Ensino primário	1
1º Ciclo do Ensino Secundário	2
2º Ciclo do Ensino Secuundário	3
Formação Superior	4

V5 8

5. Só Directores devem responder às duas questões seguintes (5.1 and 5.2).

5.1

Formação em gestão escolar	
Regular/Programas de Formação específica	1
Auto-formação	2
Seminários de iniciação	3

V6 9



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5.2

Número de anos de serviço de gestão escolar	
1-5 anos	1
6-10 anos	2
11-15 anos	3
Mais de 16 anos	4

V7

10

6. Teachers **ONLY** must complete the following two questions (6.1 and 6.2)

6.1

Qualificações pedagógicas		11-12	<input type="checkbox"/>	<input type="checkbox"/>
CFPP	1			
IMP	2			
IMAP	3			
UEM (Faculdade de Educação)	4			
Higher Education 1	5			
Higer Education 2	6			
Other qualific	7	...		

6.2

Nº de anos de ensino no EP2	
1-5 anos	1
6-10 anos	2
11-15 anos	3
Mais de 16 anos	4

V9

13



Appendix C

B. Atitude dos directores das escolas (impacto da liderança da escola na implementação do novo currículo: clareza de toda a comunidade escolar sobre os objectivos do novo currículo e empenho para a sua concretização; visão comum; coordenação e gestão da implementação do novo currículo, etc., including a reestruturação e a reculturação da escola— medidas organizacionais compatíveis às exigências do novo currículo, partilha e cooperação nos esquemas de trabalho com vista à implementação bem sucedida do novo currículo.

7. Só os membros da direcção das escolas respondem às questões da secção B.

Decida pela escala que melhor descreve a sua opinião ou situação. Use o seguinte código:
1=Discordo completamente; 2= Discordo; 3= Neutro; 4= Concordo ; 5= Concedo plenamente.

7.1		No âmbito da implementação do novo currículo, envio esforços para a promoção do desempenho dos alunos,							
7.1.1	através da estreita relação com os professores, outros membros da escola, estudantes e pais.	1	2	3	4	5	V10	<input type="text"/>	14
7.1.2	materializando o plano de acção produzido colectivamente na escola conducente à implementação bem sucedida do novo currículo.	1	2	3	4	5	V11	<input type="text"/>	15
7.1.3	promovendo a formação em serviço eficaz.	1	2	3	4	5	V12	<input type="text"/>	16
7.1.4	desafiando os professores e os alunos a cumprir as exigências do novo currículo.	1	2	3	4	5	V13	<input type="text"/>	17
7.1.5	realizando encontros regulares e frutíferos com os professores .	1	2	3	4	5	V14	<input type="text"/>	18
7.1.6	coordenando e gerindo o processo de aprendizagem.	1	2	3	4	5	V15	<input type="text"/>	19
7.17	promovendo a colaboração entre os professores conducente ao desenvolvimento de novas habilidades pela partilha de conhecimentos e experiência profissionais.	1	2	3	4	5	V16	<input type="text"/>	20
7.18	através da permanente monitoria do desempenho dos professores na implementação do novo currículo	1	2	3	4	5	V17	<input type="text"/>	21
7.19	pela maximização do tempo de aprendizagem na escola.	1	2	3	4	5	V18	<input type="text"/>	22



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7.2	Sinto-me feliz, pois						
7.2.1	a organização da escola está-se transformando, possibilitando a implementação bem sucedida do novo currículo.	1	2	3	4	5	V19 <input type="text"/> 23
7.2.2	os professores preocupam-se por observar o princípio de interdisciplinaridade preconizado pelo novo currículo.	1	2	3	4	5	V20 <input type="text"/> 24
7.2.3	a partilha e cooperação em todos os domínios são características dominantes da escola .	1	2	3	4	5	V21 <input type="text"/> 25
7.2.4	Os professores aplicam uma variedade de métodos activos de harmonia com as exigências do novo currículo.	1	2	3	4	5	V22 <input type="text"/> 26
7.2.5	a escola já produziu o currículo local e iniciou a sua implemetação.	1	2	3	4	5	V23 <input type="text"/> 27

C. Convicções e atitudes dos professores sobre o clima da escola, organização, formação em serviço (capacitação) colaboração com os pais e outros parceiros, novo currículo e ensino bem como sobre a aprendizagem dos alunos; capacidade dos professores sua confiança para cumprir às exigências do novo currículo

8. . Só os professores respondem às questões da secção B.

Decida pela escala que melhor descreve a sua opinião ou situação. Use o seguinte código:
1=Discordo plenamente ; 2= Discordo; 3= Neutro; 4= Concordo ; 5= Conco do plenamente.

8.1	Sinto que						
8.1.1	sou parte desta escola .	1	2	3	4	5	V24 <input type="text"/> 28
8.1.2	a organização da escola esta mudando, possibilitando a implementação eficaz do novo currículo.	1	2	3	4	5	V25 <input type="text"/> 29
8.1.3	é um prazer e estimulante o ensino do novo currículo nesta.	1	2	3	4	5	V26 <input type="text"/> 30
8.1.4	sou reconhecido pelo bom trabalho no âmbito do novo currículo.	1	2	3	4	5	V27 <input type="text"/> 31
8.1.5	tenho a devida compensação pelo bom trabalho que realizo no contexto do novo currículo.	1	2	3	4	5	V28 <input type="text"/> 32
8.2	Trabalho com colegas						
8.2.1	que me tratam com afecto e respeito.	1	2	3	4	5	V29 <input type="text"/> 33
8.2.2	que me escutam, se tiver ideias a contribuir para melhor ensino no contexto do novo currículo	1	2	3	4	5	V30 <input type="text"/> 34



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O meu director/ director adjunto/ coordenador do ciclo/ coordenador da área de aprendizagem								
8.3								
8.3.1	é um autêntico líder pedagógico.	1	2	3	4	5	V31 <input type="text"/> 35	
8.3.2	facilita a comunicação .de um modo eficaz.	1	2	3	4	5	V32 <input type="text"/> 36	
8.3.3	apoia-me no meu trabalho com os alunos no contexto da implemetação do novo currículo.	1	2	3	4	5	V33 <input type="text"/> 37	
8.3.4	apoia a partilha na tomada de decisões.	1	2	3	4	5	V34 <input type="text"/> 38	
8.3.5	permite que me torne num professor competente e líder pedagógico.	1	2	3	4	5	V35 <input type="text"/> 39	
8.3.6	é eficaz na orientação que nos dá, de modo que tenhamos a nova visão curricular.	1	2	3	4	5	V36 <input type="text"/> 40	
8.4	Entendo que							
8.4.1	o novo currículo contém objectivos de aprendizagem claros e enfatiza a aquisição de conhecimentos e habilidades básicos.	1	2	3	4	5	V37 <input type="text"/> 41	
8.4.2	o desenvolvimento profissional eficaz contribui positivamente para o cumprimento dos objectivos do novo cur.	1	2	3	4	5	V38 <input type="text"/> 42	
8.4.3	o desempenho dos alunos pode melhorar com a aplicação dos métodos activos de ensino-aprendizagem.	1	2	3	4	5	V39 <input type="text"/> 43	
8.4.4	os dados sobre o desempenho dos alunos são ferramenta importante para a monitoria do progresso dos alunos.	1	2	3	4	5	V40 <input type="text"/> 44	
8.4.5	o envolvimento sério dos pais e de outros parceiros é indispensável para a implementação bem sucedida do novo currículo.	1	2	3	4	5	V41 <input type="text"/> 45	
8.5	Tenho a oportunidade de							
8.5.1	desenvolver as minhas habilidades de ensino sobre o novo currículo individual ou colectivamente com os outros colegas	1	2	3	4	5	V42 <input type="text"/> 46	
8.5.2	Crescer profissionalmente no contexto de implementação do novo currículo	1	2	3	4	5	V43 <input type="text"/> 47	



Apendix C

D. Impacto do novo currículo nos aprendentes e a aprendizagem em termos de convicções e atitudes acerca da escola e do processo do ensino-aprendizagem; relação entre alunos/professores, expectativas dos alunos, recursos e aproveitamento escolar dos alunos.

9. Só alunos respondem à secção D

Decidas sobre o valor da escala que melhor descreve a tua situação. Por favor, uses os códigos seguintes ao responder às questões:

1= Discordo completamente; 2= Discordo; 3= Neutro; 4= Concordo; 5=Concordo plenamente

9.1	Sinto-me seguro, protegido, nesta escola.	1	2	3	4	5	V44	<input type="text"/>	48
9.2	Sinto-me parte desta escola.	1	2	3	4	5	V45	<input type="text"/>	49
9.3	Sinto-me desafiado, estimulado a aprender nesta escola.	1	2	3	4	5	V46	<input type="text"/>	50
9.4	Compreendo como aplicar o que aprendo na vida real.	1	2	3	4	5	V47	<input type="text"/>	51
9.5	Os professores encorajam-me a examinar a qualidade do meu próprio trabalho escolar	1	2	3	4	5	V48	<input type="text"/>	52
9.6	Em avalio o meu próprio trabalho escolar.	1	2	3	4	5	V49	<input type="text"/>	53
9.7	Sou tratado com respeito pelos professores.	1	2	3	4	5	V50	<input type="text"/>	54
9.8	Sou tratado com respeito pela direcção da escola.	1	2	3	4	5	V51	<input type="text"/>	55
9.9	Sou tratado com respeito pelos funcionários da secretaria da escola.	1	2	3	4	5	V52	<input type="text"/>	56
9.10	Sou tratado com respeito por outros alunos desta escola.	1	2	3	4	5	V53	<input type="text"/>	57
9.11	Quem é responsável pelo que aprendo na escola são os meus professores.	1	2	3	4	5	V54	<input type="text"/>	58
9.12	O trabalho, nesta escola, é desafiante, é estimulante	1	2	3	4	5	V55	<input type="text"/>	59
9.13	Acho que o que aprendo nesta escola é útil a vida real.	1	2	3	4	5	V56	<input type="text"/>	60



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9.14	Estou bem sucedido nesta escola, tenho bons resultados.	1	2	3	4	5	V57	<input type="text"/>	61
9.15	Sou eu próprio quem é responsável pelo que aprendo na escola.	1	2	3	4	5	V58	<input type="text"/>	62
9.16	Esta escola é muito divertida, reúne um ambiente alegre, atraente.	1	2	3	4	5	V59	<input type="text"/>	63
9.17	Eu gosto desta escola	1	2	3	4	5	V60	<input type="text"/>	64
9.18	Eu penso que esta escola é boa.	1	2	3	4	5	V61	<input type="text"/>	65
9.19	Gosto de aprender.	1	2	3	4	5	V62	<input type="text"/>	66
9.20	O meu sucesso na escola motivou-me, sentindo-me orgulhoso de mim.	1	2	3	4	5	V63	<input type="text"/>	67
9.21	Dedico-me ao máximo na escola.	1	2	3	4	5	V64	<input type="text"/>	68
9.22	Os alunos desta escola têm a oportunidade de aprender uns dos outros.	1	2	3	4	5	V65	<input type="text"/>	69
9.23	Os alunos desta escola têm a oportunidade de se conhecerem uns dos outros.	1	2	3	4	5	V66	<input type="text"/>	70
9.24	Para mim, a participação em actividades extracurriculares é útil.	1	2	3	4	5	V67	<input type="text"/>	71
9.25	Os alunos desta escola sabem respeitar os outros com características diferentes.	1	2	3	4	5	V68	<input type="text"/>	72
9.26	O meus professores								
9.26.1	esperam que os alunos se dediquem ao máximo nos estudos.	1	2	3	4	5	V69	<input type="text"/>	73
9.26.2	esperam que eu me dedique ao máximo.	1	2	3	4	5	V70	<input type="text"/>	74
9.26.3	Entendem quando os alunos tiverem problemas.	1	2	3	4	5	V71	<input type="text"/>	75
9.26.4	Ajudam-me a ganhar confiança na minha capacidade de poder aprender; motivam-me a aprender	1	2	3	4	5	V72	<input type="text"/>	76
9.26.5	Depositam confiança em mim.	1	2	3	4	5	V73	<input type="text"/>	77



Apendix C

O meus professores

9.26.6	conhecem-me bem.	1	2	3	4	5	V74	<input type="text"/>	78
9.26.7	escutam as minhas ideias.	1	2	3	4	5	V75	<input type="text"/>	79
9.26.8	prestam-me atenção, cuidam de mim.	1	2	3	4	5	V76	<input type="text"/>	80
9.26.9	Tornam a aprendizagem um processo alegre, devetido.	1	2	3	4	5	V77	<input type="text"/>	81
9.26.10	Gostam das disciplinas que ensinam.	1	2	3	4	5	V78	<input type="text"/>	82
9.26.11	Dão-me apoio individual, quando dele necessitar.	1	2	3	4	5	V79	<input type="text"/>	83
9.27	O novo currículo contribuirá para a minha educação no que respeita à minha habilidade de								
9.27.1	escrever.	1	2	3	4	5	V80	<input type="text"/>	84
9.27.2	ler.	1	2	3	4	5	V81	<input type="text"/>	85
9.27.3	lidar com a Matemática.	1	2	3	4	5	V82	<input type="text"/>	86
9.27.4	apresentar informação.	1	2	3	4	5	V83	<input type="text"/>	87
9.27.5	lidar com a tecnologia.	1	2	3	4	5	V84	<input type="text"/>	88
9.28	No ensino do novo currículo, o tempo é gasto								
9.28.1	ouvindo o professor a falar.	1	2	3	4	5	V85	<input type="text"/>	89
9.28.2	na discussão de toda a turma com o professor.	1	2	3	4	5	V86	<input type="text"/>	90
9.28.3	trabalhando em pequenos grupos.	1	2	3	4	5	V87	<input type="text"/>	91
9.28.4	lendo.	1	2	3	4	5	V88	<input type="text"/>	92
9.28.5	respondendo às questões do livro ou do caderno de exercício.	1	2	3	4	5	V89	<input type="text"/>	93
9.28.6	analisando o desempenho individual ou de toda a turma.	1	2	3	4	5	V90	<input type="text"/>	94



Apendix C

9.29 Trabalho berm no contexto do novo currículo									
9.29.1	em projectos ou investigando.	1	2	3	4	5	V91	<input type="text"/>	95
9.29.2	quando os professores dirigem discussões ou debates com toda a turma.	1	2	3	4	5	V92	<input type="text"/>	96
9.29.3	integrado em pequeno grupo	1	2	3	4	5	V93	<input type="text"/>	97
9.24.4	Individualmente.	1	2	3	4	5	V94	<input type="text"/>	98
9.30 Eu acho que as disciplinas mais importantes são:									
9.30.1	Língua Portuguesa	1	2	3	4	5	V95	<input type="text"/>	99
9.30.2	Língua Moçambicana	1	2	3	4	5	V96	<input type="text"/>	100
9.30.3	Língua Inglesa	1	2	3	4	5	V97	<input type="text"/>	101
9.30.4	Ciências Sociais	1	2	3	4	5	V98	<input type="text"/>	102
9.30.5	Educação Moral e Cívica	1	2	3	4	5	V99	<input type="text"/>	103
9.30.6	Matemática	1	2	3	4	5	V100	<input type="text"/>	104
9.30.7	Ciências Naturais	1	2	3	4	5	V101	<input type="text"/>	105
9.30.8	Ofícios	1	2	3	4	5	V102	<input type="text"/>	106
9.30.9	Educação Visual	1	2	3	4	5	V103	<input type="text"/>	107
9.30.10	Educação Musical	1	2	3	4	5	V104	<input type="text"/>	108
9.30.11	Educação Física	1	2	3	4	5	V105	<input type="text"/>	109
9.31 Os meus livros de preferência são :									
9.31.1	Língua Portuguesa	1	2	3	4	5	V106	<input type="text"/>	110
9.31.2	Língua Moçambicana	1	2	3	4	5	V107	<input type="text"/>	111
9.31.3	Língua Inglesa	1	2	3	4	5	V108	<input type="text"/>	112
9.31.4	Ciências Sociais	1	2	3	4	5	V109	<input type="text"/>	113
9.31.5	Educação Moral e Cívica	1	2	3	4	5	V110	<input type="text"/>	114



Apendix C

Os meus livros de preferência são:

9.31.6	Matemática	1	2	3	4	5	V111	<input type="text"/>	115
9.31.7	Ciências Naturais	1	2	3	4	5	V112	<input type="text"/>	116
9.31.8	Ofícios	1	2	3	4	5	V113	<input type="text"/>	117
9.31.9	Educação Visual	1	2	3	4	5	V114	<input type="text"/>	118
9.31.10	Educação Musical	1	2	3	4	5	V115	<input type="text"/>	119
9.31.11	Educação Física	1	2	3	4	5	V116	<input type="text"/>	120
9.32	Além dos meus livros escolares								
9.32.1	Eu leio livros	1	2	3	4	5	V117	<input type="text"/>	121
9.32.2	Eu não leio outros livros	1	2	3	4	5	V118	<input type="text"/>	122



Principals' reliability of a scale

RELIABILITY ANALYSIS - SCALE (ALPHA)

		Mean	Std Dev	Cases
1.	I7.1.1; V10	4,4839	,8113	124,0
2.	I7.1.2; V11	4,3226	,7275	124,0
3.	I7.1.3; V12	4,2903	,7411	124,0
4.	I7.1.4; V13	4,2419	1,1216	124,0
5.	I7.1.5; V14	4,2097	,8767	124,0
6.	I7.1.6; V15	4,4597	,6914	124,0
7.	I7.1.7; V16	4,5403	,6914	124,0
8.	I7.1.8; V17	4,2903	,8142	124,0
9.	I7.1.9; V18	4,0484	,9699	124,0
10.	I7.2.1; V19	4,3629	,8957	124,0
11.	I7.2.2; V20	4,5000	,6687	124,0
12.	I7.2.3; V21	4,1855	,9139	124,0
13.	I7.2.4; V22	4,4355	,6777	124,0
14.	I7.2.5; V23	3,8871	1,1491	124,0

Statistics for	Mean	Variance	Std Dev	N of Variables
SCALE	60,2581	46,6646	6,8311	14

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
I7.1.1; V10	55,7742	41,7210	,4089	,8359
I7.1.2; V11	55,9355	40,7275	,5824	,8264
I7.1.3; V12	55,9677	42,0965	,4179	,8353
I7.1.4; V13	56,0161	39,5932	,4118	,8390
I7.1.5; V14	56,0484	41,6237	,3776	,8382
I7.1.6; V15	55,7984	42,2598	,4368	,8344
I7.1.7; V16	55,7177	42,8709	,3662	,8380
I7.1.8; V17	55,9677	40,4868	,5322	,8285
I7.1.9; V18	56,2097	38,3622	,6127	,8222
I7.2.1; V19	55,8952	38,6800	,6447	,8205
I7.2.2; V20	55,7581	43,5345	,3040	,8409
I7.2.3; V21	56,0726	38,7020	,6268	,8215
I7.2.4; V22	55,8226	42,0496	,4729	,8327
I7.2.5; V23	56,3710	37,4548	,5609	,8269

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Principals' reliability of a scale

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Reliability Coefficients

N of Cases = 124,0

N of Items = 14

Alpha = ,8418



Appendix D2

The attitudes of the surveyed Schools Principals towards their role of leadership in the process of curriculum implementation in their schools

Table D2.1: Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of new curriculum through close relationship with teachers, other staff members, students and parents

			I make efforts to ensure student achievement increase in the context of the new curriculum, through close relationships with teachers, other staff members, students and parents					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Province	Niassa	Number	0	1	1	13	26	41
		% within province	.0%	2.4%	2.4%	31.7%	63.4%	100.0%
	Sofala	Number	0	1	2	19	38	60
		% within province	.0%	1.7%	3.3%	31.7%	63.3%	100.0%
	Maputo City	Number	2	1	1	7	12	23
		% within province	8.7%	4.3%	4.3%	30.4%	52.2%	100.0%
Total		Number	2	3	4	39	76	124
		% within province	1.6%	2.4%	3.2%	31.5%	61.3%	100.0%

Table D2.2: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of new curriculum through close relationship with teachers, other staff members, students and parents

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9,840(a)	8	0,276
Likelihood Ratio	7,760	8	0,457
Linear-by-Linear Association	3,154	1	0,076
N of Valid Cases	124		

(a) 9 cells (60,0%) have expected count less than 5. The minimum expected count is 0,37.

Table D2.3: Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum putting in place an action plan produced collectively in schools for effective implementation of the new curriculum

			I make efforts to ensure student achievement increase in the context of the new curriculum, putting in place an action plan produced collectively in school for effective implementation of the new curriculum				Total
			Disagree	Neutral	Agree	Strongly Agree	
Province	Niassa	Number	2	3	18	18	41
		% within province	4.9%	7.3%	43.9%	43.9%	100.0%
	Sofala	Number	0	6	23	31	60
		% within province	.0%	10.0%	38.3%	51.7%	100.0%
	Maputo City	Number	0	4	11	8	23
		% within province	.0%	17.3%	45.8%	33.3%	100.0%
Total		Number	2	13	52	57	124
		% within province	1.6%	10.4%	41.9%	46.0%	100.0%

Table D2.4: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum putting in place an action plan produced collectively in schools for effective implementation of the new curriculum

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7,003(a)	6	0,321
Likelihood Ratio	7,292	6	0,295
Linear-by-Linear Association	0,044	1	0,834
N of Valid Cases	124		

(a). 5 cells (41,7%) have expected count less than 5. The minimum expected count is 0,37.



Table D2.5: Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum through effective professional development of the new curriculum

			I make efforts to ensure student achievement increase in the context of the new curriculum, through effective professional development of the new curriculum.					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Province	Niassa	Number	0	0	5	17	19	41
		% within province	.0%	.0%	12.2%	41.5%	46.3%	100.0%
	Sofala	Number	1	1	4	27	27	60
		% within province	1.7%	1.7%	6.7%	45.0%	45.0%	100.0%
	Maputo City	Number	0	0	3	13	7	23
		% within province	.0%	.0%	13.0%	56.5%	30.4%	100.0%
Total		Number	1	1	12	57	53	124
		% within province	.8%	.8%	9.7%	46.0%	42.7%	100.0%

Table D2.6: Chi-Square Tests Of Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of new curriculum through effective professional development of the new curriculum

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4,995(a)	8	0,758
Likelihood Ratio	5,842	8	0,665
Linear-by-Linear Association	0,676	1	0,411
N of Valid Cases	124		

(a). 8 cells (53,3%) have expected count less than 5. The minimum expected count is 0,19.



Table D2.7: Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum challenging teachers and students continuously to fulfil curriculum goals

			I make efforts to ensure student achievement increase in the context of the new curriculum, challenging teachers and students continuously to fulfill curriculum goals					
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Province	Niassa	Number	0	1	2	9	29	41
		% within province	.0%	2.4%	4.9%	22.0%	70.7%	100.0%
	Sofala	Number	3	4	6	15	32	60
		% within province	5.0%	6.7%	10.0%	25.0%	53.3%	100.0%
	Maputo City	Number	3	4	1	4	11	23
		% within province	13.0%	17.4%	4.3%	17.4%	47.8%	100.0%
Total		Number	6	9	9	28	72	124
		% within province	4.8%	7.3%	7.3%	22.6%	58.1%	100.0%

Table D2.8: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum, challenging teachers and students continuously to fulfil curriculum goals

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14,607(a)	8	,067
Likelihood Ratio	14,071	8	,080
Linear-by-Linear Association	9,896	1	,002
N of Valid Cases	124		

(a) 9 cells (60,0%) have expected count less than 5. The minimum expected count is 0 ,93.

Table D2.9: Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of new curriculum undertaking regular and productive staff meetings regarding new curriculum

			I make efforts to ensure student achievement increase in the context of the new curriculum, undertaking regular and productive staff meetings regarding new curriculum					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Province	Niassa	Number	0	1	3	21	16	4
		% within province	0.0%	2.4%	7.3%	51.2%	39.0%	100.0%
	Sofala	Number	2	3	7	22	26	60
		% within province	3.3%	5.0%	11.7%	36.7%	43.3%	100.0%
	Maputo City	Number	0	0	3	9	11	23
		% within province	0.0%	0.0%	13.0%	39.1%	47.8%	100.0%
Total		Number	2	4	13	52	53	124
		% within province	1.6%	3.2%	10.5%	41.9%	42.7%	100.0%

Table D2.10: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of new curriculum, undertaking regular and productive staff meetings on new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.715 ^a	8	0.679
Likelihood Ratio	7.145	8	0.521
Linear-by-Linear Association	0.013	1	0.910
N of Valid Cases	124		

a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is 0.37.

Table D2.11: Comparison of Principals' efforts from the three provinces to ensure student achievement increase, coordinating and managing learning processes in the context of the new curriculum

			I make efforts to ensure student achievement increase, coordinating and managing learning processes in the context of the new curriculum				Total
			Disagree	Neutral	Agree	Strongly Agree	
Province	Niassa	Number	2	2	14	23	41
		% within province	4.9%	4.9%	34.1%	56.1%	100.0%
	Sofala	Number	0	5	22	33	60
		% within province	.0%	8.3%	36.7%	55.0%	100.0%
	Maputo City	Number	0	1	9	13	23
		% within province	.0%	4.3%	39.1%	56.5%	100.0%
Total		Number	2	8	45	69	124
		% within province	1.6%	6.5%	36.3%	55.6%	100.0%

Table D2.12: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure student achievement increase, coordinating and managing learning process in the context of new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.808 ^a	6	0.569
Likelihood Ratio	5.193	6	0.519
Linear-by-Linear Association	.365	1	0.546
N of Valid Cases	124		

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is 0.37.

Table D2.13: Comparison of Principals' efforts from three provinces to ensure student achievement increase in the context of new curriculum promoting collaboration among teachers through which they develop new skills by sharing professional knowledge regarding to new curriculum

			I make efforts to ensure student achievement increase in the context of the new curriculum promoting collaboration among teachers through which they develop new skills by sharing professional knowledge regarding new curriculum					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Province	Niasa	Number	0	1	1	13	26	41
		% within province	.0%	2.4%	2.4%	31.7%	63.4%	100.0%
	Sofala	Number	1	0	3	19	37	60
		% within province	1.7%	.0%	5.0%	31.7%	61.7%	100.0%
	Maputo City	Number	0	0	1	8	14	23
		% within province	.0%	.0%	4.3%	34.8%	60.9%	100.0%
Total		Number	1	1	5	40	77	124
		% within province	.8%	.8%	4.0%	32.3%	62.1%	100.0%

Table D.14: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum promoting collaboration among teachers through which they develop new skills by sharing professional knowledge regarding new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3,569(a)	8	0,894
Likelihood Ratio	4,175	8	0,841
Linear-by-Linear Association	0,003	1	0,960
N of Valid Cases	124		

(a) 9 cells (60,0%) have expected count less than 5. The minimum expected count is ,19.

Table D2.15: Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum monitoring continuously teachers performance regarding new curriculum

			I make efforts to ensure student achievement increase in the context of the new curriculum, monitoring continuously teachers performance regarding new curriculum					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Province	Niassa	Number	2	0	5	18	16	41
		% within province	4.9%	.0%	12.2%	43.9%	39.0%	100.0%
	Sofala	Number	0	1	6	21	32	60
		% within province	.0%	1.7%	10.0%	35.0%	53.3%	100.0%
	Maputo City	Number	0	0	2	12	9	23
		% within province	.0%	.0%	8.7%	52.2%	39.1%	100.0%
Total		Number	2	1	13	51	57	124
		% within province	1.6%	.8%	10.5%	41.1%	46.0%	100.0%

Table D2.16: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure Student achievement increase in the context of the new curriculum monitoring continuously teachers performance regarding new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.992 ^a	8	0.434
Likelihood Ratio	8.729	8	0.366
Linear-by-Linear Association	1.283	1	0.257
N of Valid Cases	124		

a. 8 cells (53.3%) have expected count less than 5. The minimum expected count is 0.19.



Table D2.17: Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum maximizing the amount of school time used for learning in scope of the new curriculum

			I make efforts to ensure student achievement increase in the context of the new curriculum, maximizing the amount of school time used for learning in scope of new curriculum					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Province	Niassa	Number	1	1	6	17	16	41
		% within province	2.4%	2.4%	14.6%	41.5%	39.0%	100.0%
	Sofala	Number	2	2	5	29	22	60
		% within province	3.3%	3.3%	8.3%	48.3%	36.7%	100.0%
	Maputo City	Number	1	2	5	9	6	23
		% within province	4.3%	8.7%	21.7%	39.1%	26.1%	100.0%
Total		Number	4	5	16	55	44	124
		% within province	3.2%	4.0%	12.9%	44.4%	35.5%	100.0%

Table D2.18 : Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum maximizing the amount of school time used for learning in scope of new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.374 ^a	8	0.717
Likelihood Ratio	5.060	8	0.751
Linear-by-Linear Association	1.777	1	0.183
N of Valid Cases	124		

a. 7 cells (46.7%) have expected count less than 5. The minimum expected count is 0.74.



Table D2.19: Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership translated into new School Organization, which is being implemented within their Schools to cope with the requirements of the new curriculum

			I am satisfied that the new school organization is being implemented to cope with the requirements of the new curriculum					
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Province	Niassa	Number	1	1	2	13	24	41
		% within province	2.4%	2.4%	4.9%	31.7%	58.5%	100.0%
	Sofala	Number	1	2	2	17	38	60
		% within province	1.7%	3.3%	3.3%	28.3%	63.3%	100.0%
	Maputo City	Number	0	2	4	10	7	23
		% within province	.0%	8.7%	17.4%	43.5%	30.4%	100.0%
Total		Number	2	5	8	40	69	124
		% within province	1.6%	4.0%	6.5%	32.3%	55.6%	100.0%

Table D2.20: Chi-Square Tests on Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership translated into new School Organization, which is being implemented within their schools to cope with the requirements of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11,959(a)	8	0,153
Likelihood Ratio	11,304	8	0,185
Linear-by-Linear Association	2,671	1	0,102
N of Valid Cases	124		

(a). 9 cells (60,0%) have expected count less than 5. The minimum expected count is 0,37.



Table D2.21: Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership, which is expressed in significant efforts from teachers to observe interdisciplinarity principle in the lessons plans they make as set up in the new curriculum

			I am satisfied that there are significant efforts from teachers to observe interdisciplinarity principle in the lessons plans they make as set up in new curriculum				
			Disagree	Neutral	Agree	Strongly Agree	Total
Province	Niassa	Number	1	2	14	24	41
		% within province	2.4%	4.9%	34.1%	58.5%	100.0%
	Sofala	Number	0	5	19	36	60
		% within province	.0%	8.3%	31.7%	60.0%	100.0%
	Maputo City	Count	0	2	8	13	23
		% within province	.0%	8.7%	34.8%	56.5%	100.0%
Total		Count	1	9	41	73	124
		% within province	.8%	7.3%	33.1%	58.9%	100.0%

Table D2.22: Chi-Square Tests on Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership, which is expressed in significant efforts from teachers to observe interdisciplinarity principle in the lessons plans they make as set up in the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,611(a)	6	0,856
Likelihood Ratio	2,834	6	0,829
Linear-by-Linear Association	0,000	1	1,000
N of Valid Cases	124		

(a) 6 cells (50,0%) have expected count less than 5. The minimum expected count is 0,19.



Table D2.23: Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership that is manifested in good school atmosphere, translated into sharing and cooperation on all school activities, enabling effective implementation of new curriculum

			I am satisfied that sharing and cooperation on all issues enabling effective implementation of new curriculum characterizes the school climate					
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
Province	Niassa	Number	1	2	4	16	18	41
		% within province	2.4%	4.9%	9.8%	39.0%	43.9%	100.0%
	Sofala	Number	0	4	7	19	30	60
		% within province	0.0%	6.7%	11.7%	31.7%	50.0%	100.0%
	Maputo City	Number	0	0	7	8	8	23
		% within province	0.0%	0.0%	30.4%	34.8%	34.8%	100.0%
Total		Number	1	6	18	43	56	124
		% within province	0.8%	4.8%	14.5%	34.7%	45.2%	100.0%

Table D2.24: Chi-Square Tests on Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership that is manifested in good school atmosphere, translated into sharing and cooperation on all school activities, enabling effective implementation of new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9,797(a)	8	0,280
Likelihood Ratio	10,223	8	0,250
Linear-by-Linear Association	0,138	1	0,710
N of Valid Cases	124		

(a) 7 cells (46,7%) have expected count less than 5. The minimum expected count is 0,19.



Table D2.25: Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership, which is expressed in using a variety of active methods by teachers in their teaching as required by the new curriculum

			I am satisfied that teachers are using a variety of active methods in their teaching as required by the new curriculum				Total
			Disagree	Neutral	Agree	Strongly Agree	
Province	Niassa	Number	1	1	16	23	41
		% within province	2.4%	2.4%	39.0%	56.1%	100.0%
	Sofala	Number	0	4	23	33	60
		% within province	0.0%	6.7%	38.3%	55.0%	100.0%
	Maputo City	Number	1	2	11	9	23
		% within province	4.3%	8.7%	47.8%	39.1%	100.0%
Total	Number		2	7	50	65	124
	% within province		1.6%	5.6%	40.3%	52.4%	100.0%

Table D2.26: Chi-Square Tests on Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership, which is expressed in using a variety of active methods by teachers in their teaching as required by the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.799 ^a	6	0.570
Likelihood Ratio	5.599	6	0.470
Linear-by-Linear Association	1.819	1	0.177
N of Valid Cases	124		

a. 6 cells (50.0%) have expected count less than 5. The minimum expected count is 0.37.



Table D2.27: Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership, which is expressed in local curriculum development within the schools and starting of its implementation

			I am satisfied that the school has already developed the local curriculum and started its implementation					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Province	Niassa	Number	1	2	4	19	15	41
		% within province	2.4%	4.9%	9.8%	46.3%	36.6%	100.0%
	Sofala	Number	2	6	7	19	26	60
		% within province	3.3%	10.0%	11.7%	31.7%	43.3%	100.0%
	Maputo City	Number	3	3	9	3	5	23
		% within province	13.0%	13.0%	39.1%	13.0%	21.7%	100.0%
Total		Number	6	11	20	41	46	124
		% within province	4.8%	8.9%	16.1%	33.1%	37.1%	100.0%

Table D2.28: Chi-Square Tests on Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership, which is expressed in local curriculum development within the schools and starting of its implementation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21,665(a)	8	0,006
Likelihood Ratio	19,770	8	0,011
Linear-by-Linear Association	7,730	1	0,005
N of Valid Cases	124		

(a). 6 cells (40,0%) have expected count less than 5. The minimum expected count is 1,11.



The attitudes of the surveyed Schools Principals towards their role of leadership in the process of curriculum implementation in their schools

Table D2a.1: Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of new curriculum through close relationship with teachers, other staff members, students and parents (after merging cells together with an expected frequency less than 5)

			I make efforts to ensure student achievement increase in the context of the new curriculum, through close relationships with teachers, other staff members, students and parents		Total
			Agree	Strongly Agree	
province	Niassa	Number	15	26	41
		% within province	36,6%	63,4%	100,0%
	Sofala	Count	22	38	60
		% within province	17,7%	30,6%	48,4%
	Maputo City	Number	11	12	23
		% within province	47,8%	52,2%	100,0%
		% within province	8,9%	9,7%	18,5%
Total	Number		48	76	124
	% within province		38,7%	61,3%	100,0%

Table D2a.2: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of new curriculum through close relationship with teachers, other staff members, students and parents (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	0,989(a)	2	0,610
Likelihood Ratio	0,972	2	0,615
Linear-by-Linear Association	0,600	1	0,439
N of Valid Cases	124		

(a) 0 cells (0,0%) have expected count less than 5. The minimum expected count is 8,90.



Table D2.3a: Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum putting in place an action plan produced collectively in schools for effective implementation of the new curriculum (after merging cells together with an expected frequency less than 5)

			I make efforts to ensure student achievement increase in the context of the new curriculum, putting in place an action plan produced collectively in school for effective implementation of the new curriculum		Total
			Agree	Strongly Agree	
province	Niassa	Number	23	18	41
		% within province	56,1%	43,9%	100,0%
	Sofala	Number	29	31	60
		% within province	48,3%	51,7%	100,0%
	Maputo City	Number	15	8	23
		% within province	65,2%	34,8%	100,0%
Total	Number		67	57	124
	% within province		54,0%	46,0%	100,0%

Table D2a.4: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum putting in place an action plan produced collectively in schools for effective implementation of the new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,014(a)	2	0,365
Likelihood Ratio	2,035	2	0,361
Linear-by-Linear Association	0,194	1	0,660
N of Valid Cases	124		

(a) 0 cells (,0%) have expected count less than 5. The minimum expected count is 10,57.

Table D2a.5: Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum through effective



professional development of the new curriculum (after merging cells together with an expected frequency less than 5)

			I make efforts to ensure student achievement increase in the context of the new curriculum, through effective professional development of the new curriculum.		Total
			Agree	Strongly Agree	
Province	Niassa	Number	22	19	41
		% within province	53,7%	46,3%	100,0%
	Sofala	Number	33	27	60
		% within province	55,0%	45,0%	100,0%
	Maputo City	Number	16	7	23
		% within province	69,6%	30,4%	100,0%
Total		Number	71	53	124
		% within province	57,3%	42,7%	100,0%

Table D2a.6: Chi-Square Tests Of Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of new curriculum through effective professional development of the new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1,766(a)	2	0,414
Likelihood Ratio	1,816	2	0,403
Linear-by-Linear Association	1,224	1	0,268
N of Valid Cases	124		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 9,83.



Table D2a.7: Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum challenging teachers and students continuously to fulfill curriculum goals (after merging cells together with an expected frequency less than 5)

			I make efforts to ensure student achievement increase in the context of the new curriculum, challenging teachers and students continuously to fulfill curriculum goals			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	3	9	29	41
		% within province	7,3%	22,0%	70,7%	100,0%
	Sofala	Number	12	16	32	60
		% within province	20,0%	26,7%	53,3%	100,0%
	Maputo City	Number	8	4	11	23
		% within province	34,8%	17,4%	47,8%	100,0%
Total		Number	23	29	72	124
		% within province	18,5%	23,4%	58,1%	100,0%

Table D2a.8: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum, challenging teachers and students continuously to fulfill curriculum goals (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8,570(a)	4	0,073
Likelihood Ratio	8,715	4	0,069
Linear-by-Linear Association	6,686	1	0,010
N of Valid Cases	124		

(a) 1 cells (11,1%) have expected count less than 5. The minimum expected count is 4,27.

Table D2a.9: Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of new curriculum undertaking regular and productive staff meetings regarding new curriculum (after merging cells together with an expected frequency less than 5)

			I make efforts to ensure student achievement increase in the context of the new curriculum, undertaking regular and productive staff meetings regarding new curriculum		Total
			Agree	Strongly Agree	
province	Niassa	Number	25	16	41
		% within province	61,0%	39,0%	100,0%
	Sofala	Number	34	26	60
		% within province	56,7%	43,3%	100,0%
	Maputo City	Number	12	11	23
		% within province	52,2%	47,8%	100,0%
Total		Number	71	53	124
		% within province	57,3%	42,7%	100,0%

Table D2a.10: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of new curriculum, undertaking regular and productive staff meetings on new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	0,483(a)	2	0,785
Likelihood Ratio	0,483	2	0,785
Linear-by-Linear Association	0,479	1	0,489
N of Valid Cases	124		

(a) 0 cells (,0%) have expected count less than 5. The minimum expected count is 9,83.



Table D2a.11: Comparison of Principals' efforts from the three provinces to ensure student achievement increase, coordinating and managing learning processes in the context of the new curriculum (after merging cells together with an expected frequency less than 5)

			I make efforts to ensure student achievement increase, coordinating and managing learning processes in the context of the new curriculum		Total
			Agree	Strongly Agree	
province	Niassa	Number	18	23	41
		% within province	43,9%	56,1%	100,0%
	Sofala	Number	27	33	60
		% within province	45,0%	55,0%	100,0%
	Maputo City	Number	10	13	23
		% within province	43,5%	56,5%	100,0%
Total		Number	55	69	124
		% within province	44,4%	55,6%	100,0%

Table D2a.12: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure student achievement increase, coordinating and managing learning process in the context of new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	,021(a)	2	0,990
Likelihood Ratio	0,021	2	0,990
Linear-by-Linear Association	0,000	1	0,997
N of Valid Cases	124		

(a). 0 cells (,0%) have expected count less than 5. The minimum expected count is 10,20.



Table D2a.13: Comparison of Principals' efforts from three provinces to ensure student achievement increase in the context of new curriculum promoting collaboration among teachers through which they develop new skills by sharing professional knowledge regarding to new curriculum (after merging cells together with an expected frequency less than 5)

			I make efforts to ensure student achievement increase in the context of the new curriculum promoting collaboration among teachers through which they develop new skills by sharing professional knowledge regarding new curriculum		Total
			Agree	Strongly Agree	
province	Niassa	Number	15	26	41
		% within province	36,6%	63,4%	100,0%
	Sofala	Number	23	37	60
		% within province	38,3%	61,7%	100,0%
	Maputo City	Number	9	14	23
		% within province	39,1%	60,9%	100,0%
Total		Number	47	77	124
		% within province	37,9%	62,1%	100,0%

Table D2a.14: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum promoting collaboration among teachers through which they develop new skills by sharing professional knowledge regarding new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	0,050(a)	2	0,975
Likelihood Ratio	0,050	2	0,975
Linear-by-Linear Association	0,046	1	0,829
N of Valid Cases	124		

(a) 0 cells (,0%) have expected count less than 5. The minimum expected count is 8,72.



Table D2a.15: Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum monitoring continuously teachers performance regarding new curriculum (after merging cells together with an expected frequency less than 5)

			I make efforts to ensure student achievement increase in the context of the new curriculum, monitoring continuously teachers performance regarding new curriculum			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	7	18	16	41
		% within province	17,1%	43,9%	39,0%	100,0%
	Sofala	Number	7	21	32	60
		% within province	11,7%	35,0%	53,3%	100,0%
	Maputo City	Number	2	12	9	23
		% within province	8,7%	52,2%	39,1%	100,0%
Total		Number	16	51	57	124
		% within province	12,9%	41,1%	46,0%	100,0%

Table D2a.16: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure Student achievement increase in the context of the new curriculum monitoring continuously teachers' performance regarding new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3,618(a)	4	0,460
Likelihood Ratio	3,585	4	0,465
Linear-by-Linear Association	0,526	1	0,468
N of Valid Cases	124		

a. 1 cells (11,1%) have expected count less than 5. The minimum expected count is 2,97.

Table D2a.17: Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum maximizing the amount of school time used for learning in scope of the new curriculum (after merging cells together with an expected frequency less than 5)

			I make efforts to ensure student achievement increase in the context of the new curriculum, maximizing the amount of school time used for learning in scope of new curriculum			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	8	17	16	41
		% within province	19,5%	41,5%	39,0%	100,0%
	Sofala	Number	9	29	22	60
		% within province	15,0%	48,3%	36,7%	100,0%
	Maputo City	Number	8	9	6	23
		% within province	34,8%	39,1%	26,1%	100,0%
Total		Number	25	55	44	124
		% within province	20,2%	44,4%	35,5%	100,0%

Table D2a.18: Chi-Square Tests on Comparison of Principals' efforts from the three provinces to ensure student achievement increase in the context of the new curriculum maximizing the amount of school time used for learning in scope of new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4,414(a)	4	0,353
Likelihood Ratio	4,108	4	0,392
Linear-by-Linear Association	1,590	1	0,207
N of Valid Cases	124		

(after merging cells together with an expected frequency less than 5)

a 1 cells (11,1%) have expected count less than 5. The minimum expected count is 4,64.



Table D2a.19: Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership translated into new School Organization, which is being implemented within their Schools to cope with the requirements of the new curriculum (after merging cells together with an expected frequency less than 5)

			I am satisfied that the new school organization is being implemented to cope with the requirements of the new curriculum		Total
			Agree	Strongly Agree	
province	Niassa	Number	17	24	41
		% within province	41,5%	58,5%	100,0%
	Sofala	Number	22	38	60
		% within province	36,7%	63,3%	100,0%
	Maputo City	Number	16	7	23
		% within province	69,6%	30,4%	100,0%
Total		Number	55	69	124
		% within province	44,4%	55,6%	100,0%

Table D2a.20: Chi-Square Tests on Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership translated into new School Organization, which is being implemented within their schools to cope with the requirements of the new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7,498(a)	2	0,024
Likelihood Ratio	7,553	2	0,023
Linear-by-Linear Association	3,193	1	0,074
N of Valid Cases	124		

a 0 cells (,0%) have expected count less than 5. The minimum expected count is 10,20.



Table D2a.21: Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership, which is expressed in significant efforts from teachers to observe interdisciplinarity principle in the lessons plans they make as set up in the new curriculum (after merging cells together with an expected frequency less than 5)

			I am satisfied that there are significant efforts from teachers to observe interdisciplinarity principle in the lessons plans they make as set up in new curriculum		Total
			Agree	Strongly Agree	
province	Niassa	Number	17	24	41
		% within province	41,5%	58,5%	100,0%
	Sofala	Number	22	38	60
		% within province	36,7%	63,3%	100,0%
	Maputo City	Number	16	7	23
		% within province	69,6%	30,4%	100,0%
Total		Number	55	69	124
		% within province	44,4%	55,6%	100,0%

Table D2a.22: Chi-Square Tests on Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership, which is expressed in significant efforts from teachers to observe interdisciplinarity principle in the lessons plans they make as set up in the new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7,498(a)	2	0,024
Likelihood Ratio	7,553	2	0,023
Linear-by-Linear Association	3,193	1	0,074
N of Valid Cases	124		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 10,20.

Table D2a.23: Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership that is manifested in good school atmosphere, translated into sharing and cooperation on all school activities, enabling effective implementation of new curriculum (after merging cells together with an expected frequency less than 5)

			I am satisfied that sharing and cooperation on all issues enabling effective implementation of new curriculum characterizes the school climate			Total
			Neutral	Agree	Strongly Agree	
Province	Niassa	Number	7	16	18	41
		% within province	17,1%	39,0%	43,9%	100,0%
	Sofala	Number	11	19	30	60
		% within province	18,3%	31,7%	50,0%	100,0%
	Maputo City	Number	7	8	8	23
		% within province	30,4%	34,8%	34,8%	100,0%
Total		Number	25	43	56	124
		% within province	20,2%	34,7%	45,2%	100,0%

Table D2a.24: Chi-Square Tests on Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership that is manifested in good school atmosphere, translated into sharing and cooperation on all school activities, enabling effective implementation of new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,752(a)	4	0,600
Likelihood Ratio	2,635	4	0,621
Linear-by-Linear Association	0,827	1	0,363
N of Valid Cases	124		

(a) 1 cells (11,1%) have expected count less than 5. The minimum expected count is 4,64.



Table D2a.25: Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership, which is expressed in using a variety of active methods by teachers in their teaching as required by the new curriculum (after merging cells together with an expected frequency less than 5)

			I am satisfied that teachers are using a variety of active methods in their teaching as required by the new curriculum		Total
			Agree	Strongly Agree	
province	Niassa	Number	18	23	41
		% within province	43,9%	56,1%	100,0%
	Sofala	Number	27	33	60
		% within province	45,0%	55,0%	100,0%
	Maputo City	Number	14	9	23
		% within province	60,9%	39,1%	100,0%
Total		Number	59	65	124
		% within province	47,6%	52,4%	100,0%

Table D2a.26: Chi-Square Tests on Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership, which is expressed in using a variety of active methods by teachers in their teaching as required by the new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,011(a)	2	0,366
Likelihood Ratio	2,018	2	0,365
Linear-by-Linear Association	1,350	1	0,245
N of Valid Cases	124		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 10,94.



Table Da.27: Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership, which is expressed in local curriculum development within the schools and starting of its implementation (after merging cells together with an expected frequency less than 5)

			I am satisfied that the school has already developed the local curriculum and started its implementation			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	7	19	15	41
		% within province	17,1%	46,3%	36,6%	100,0%
	Sofala	Number	15	19	26	60
		% within province	25,0%	31,7%	43,3%	100,0%
	Maputo City	Number	15	3	5	23
		% within province	65,2%	13,0%	21,7%	100,0%
Total		Number	37	41	46	124
		% within province	29,8%	33,1%	37,1%	100,0%

Table D2a.28: Chi-Square Tests on Comparison of the level of satisfaction of Principals among the three provinces as a result of their leadership, which is expressed in local curriculum development within the schools and starting of its implementation (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19,462(a)	4	0,001
Likelihood Ratio	18,259	4	0,001
Linear-by-Linear Association	6,781	1	0,009
N of Valid Cases	124		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 6,86.



Teachers' reliability of a scale

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)					
		Mean	Std Dev	Cases	
1.	I8.1.1; V24	4,2534	,9812	221,0	
2.	I8.1.2; V25	3,8597	1,1335	221,0	
3.	I8.1.3; V26	3,7421	1,2974	221,0	
4.	I8.1.4; V27	3,8597	1,2035	221,0	
5.	I8.1.5; V28	3,3394	1,4390	221,0	
6.	I8.2.1; V29	4,4118	,8622	221,0	
7.	I8.2.2; V30	4,2036	,9435	221,0	
8.	I8.3.1; V31	4,0407	1,0150	221,0	
9.	I8.3.2; V32	4,1900	,8739	221,0	
10.	I8.3.3; V33	4,0995	,9289	221,0	
11.	I8.3.4; V34	3,9683	,9601	221,0	
12.	I8.3.5; V35	4,0543	,9614	221,0	
13.	I8.3.6; V36	3,9593	,9969	221,0	
14.	I8.4.1; V37	3,8959	1,1572	221,0	
15.	I8.4.2; V38	3,8416	1,0433	221,0	
16.	I8.4.3; V39	3,9321	1,0574	221,0	
17.	I8.4.4; V40	3,8462	1,0803	221,0	
18.	I8.4.5; V41	4,3303	,9364	221,0	
19.	I8.5.1; V42	4,1810	1,0242	221,0	
20.	I8.5.2; V43	4,1041	1,1374	221,0	
Statistics for		Mean	Variance	Std Dev	N of
SCALE		80,1131	171,1371	13,0819	Variables 20



Teachers' reliability of a scale

RELIABILITY ANALYSIS - SCALE (ALPHA)

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Alpha if Item Deleted
I8.1.1; V24	75,8597	161,4121	,3514	,9146
I8.1.2; V25	76,2534	153,1719	,5945	,9093
I8.1.3; V26	76,3710	152,4072	,5322	,9113
I8.1.4; V27	76,2534	152,0900	,5929	,9094
I8.1.5; V28	76,7738	148,0122	,6013	,9098
I8.2.1; V29	75,7014	161,8013	,3918	,9135
I8.2.2; V30	75,9095	157,4463	,5406	,9106
I8.3.1; V31	76,0724	156,4402	,5383	,9106
I8.3.2; V32	75,9231	158,2895	,5495	,9105
I8.3.3; V33	76,0136	155,1953	,6516	,9083
I8.3.4; V34	76,1448	155,1426	,6302	,9087
I8.3.5; V35	76,0588	154,9647	,6370	,9085
I8.3.6; V36	76,1538	153,5580	,6713	,9076
I8.4.1; V37	76,2172	152,9435	,5889	,9094
I8.4.2; V38	76,2715	153,3805	,6450	,9081
I8.4.3; V39	76,1810	152,6489	,6648	,9076
I8.4.4; V40	76,2670	154,0784	,5925	,9093
I8.4.5; V41	75,7828	159,7981	,4419	,9126
P8.5.1; V42	75,9321	155,5272	,5700	,9099
P8.5.2; V43	76,0090	154,6726	,5362	,9108

Reliability Coefficients

N of Cases = 221,0

N of Items = 20

Alpha = ,9142

The attitudes and beliefs of surveyed teachers towards the implementation of the new curriculum

Table E2.1: Comparison of expressed school ownership feeling by teachers from the three provinces who participated in the investigation

			I feel like I belong at this school					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	1	0	6	23	41	71
		% within province	1,4%	0,0%	8,5%	32,4%	57,7%	100,0%
	Sofala	Number	2	3	8	22	40	75
		% within province	2,7%	4,0%	10,7%	29,3%	53,3%	100,0%
	Maputo City	Number	4	2	14	21	34	75
		% within province	5,3%	2,7%	18,7%	28,0%	45,3%	100,0%
Total	Number		7	5	28	66	115	221
	% within province		3,2%	2,3%	12,7%	29,9%	52,0%	100,0%

Table E2.2: Chi-square tests on comparison of expressed school ownership feeling by teachers from the three provinces who participated in the investigation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9,252(a)	8	0,321
Likelihood Ratio	10,549	8	0,229
Linear-by-Linear Association	5,992	1	0,014
N of Valid Cases	221		

a 6 cells (40,0%) have expected count less than 5. The minimum expected count is 1,61.

Table E2.3: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about school organization towards implementation of the new curriculum

			I feel that school organization is changing and enabling successful implementation of the new curriculum					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	3	1	5	27	35	71
		% within province	4,2%	1,4%	7,0%	38,0%	49,3%	100,0%
	Sofala	Number	1	7	8	26	33	75
		% within province	1,3%	9,3%	10,7%	34,7%	44,0%	100,0%
	Maputo City	Number	8	9	23	28	7	75
		% within province	10,7%	12,0%	30,7%	37,3%	9,3%	100,0%
Total		Number	12	17	36	81	75	221
		% within province	5,4%	7,7%	16,3%	36,7%	33,9%	100,0%

Table E2.4: Chi-Square Tests on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about school organization towards implementation of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	47,390(a)	8	0,000
Likelihood Ratio	53,077	8	0,000
Linear-by-Linear Association	31,165	1	0,000
N of Valid Cases	221		

a 3 cells (20,0%) have expected count less than 5. The minimum expected count is 3,86.

Table E2.5: Comparison of teachers' opinions from the three provinces who participated in the research about new curriculum teaching in their schools

			I feel that teaching new curriculum is fun at this school					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	4	2	5	26	34	71
		% within province	5,6%	2,8%	7,0%	36,6%	47,9%	100%
	Sofala	Number	8	10	7	19	31	75
		% within province	10,7%	13,3%	9,3%	25,3%	41,3%	100%
	Maputo City	Number	6	16	17	19	17	75
		% within province	8,0%	21,3%	22,7%	25,3%	22,7%	100%
Total		Number	18	28	29	64	82	221
		% within province	8,1%	12,7%	13,1%	29,0%	37,1%	100%

Table E2.6: Chi-Square on Comparison of teachers' opinions from the three provinces who participated in the research about the new curriculum teaching in their schools

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27,993(a)	8	0,000
Likelihood Ratio	29,745	8	0,000
Linear-by-Linear Association	15,634	1	0,000
N of Valid Cases	221		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 5,78.

Table E2.7: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their acknowledgement for good work in scope of the new curriculum

			I feel acknowledged for good work in scope of the new curriculum					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	3	1	5	27	35	71
		% within province	4,2%	1,4%	7,0%	38,0%	49,3%	100%
	Sofala	Number	5	10	9	18	33	75
		% within province	6,7%	13,3%	12,0%	24,0%	44,0%	100%
	Maputo City	Number	6	8	22	22	17	75
		% within province	8,0%	10,7%	29,3%	29,3%	22,7%	100%
Total		Number	14	19	36	67	85	221
		% within province	6,3%	8,6%	16,3%	30,3%	38,5%	100%



Table E2.8: Chi-Square Tests on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their acknowledgement for good work in scope of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29,880(a)	8	0,000
Likelihood Ratio	32,134	8	0,000
Linear-by-Linear Association	15,609	1	0,000
N of Valid Cases	221		

a 3 cells (20,0%) have expected count less than 5. The minimum expected count is 4,50.

Table E2.9: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their fair reward for doing well in implementation of the new curriculum

			I feel fairly rewarded for doing well in implementation of the new curriculum					
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
province	Niassa	Number	4	4	4	28	31	71
		% within province	5,6%	5,6%	5,6%	39,4%	43,7%	100%
	Sofala	Number	15	7	9	19	25	75
		% within province	20,0%	9,3%	12,0%	25,3%	33,3%	100%
	Maputo City	Number	18	21	18	14	4	75
		% within province	24,0%	28,0%	24,0%	18,7%	5,3%	100%
Total		Number	37	32	31	61	60	221
		% within province	16,7%	14,5%	14,0%	27,6%	27,1%	100%

Table E2.10: Chi-Square on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their fair reward for doing well in implementation of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	59,096(a)	8	0,000
Likelihood Ratio	65,280	8	0,000
Linear-by-Linear Association	43,279	1	0,000
N of Valid Cases	221		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 9,96.

Table E2.11: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their mutual respect within schools in implementation of the new curriculum

			I work with colleagues who treat me with respect					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	2	0	5	25	39	71
		% within province	2,8%	0,0%	7,0%	35,2%	54,9%	100,0%
	Sofala	Number	1	1	7	14	52	75
		% within province	1,3%	1,3%	9,3%	18,7%	69,3%	100,0%
	Maputo City	Number	2	1	7	27	38	75
		% within province	2,7%	1,3%	9,3%	36,0%	50,7%	100,0%
Total		Number	5	2	19	66	129	221
		% within province	2,3%	,9%	8,6%	29,9%	58,4%	100,0%

Table E2.12: Chi-Square on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their mutual respect within schools in implementation of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8,903(a)	8	0,351
Likelihood Ratio	9,901	8	0,272
Linear-by-Linear Association	0,407	1	0,523
N of Valid Cases	221		

(a). 6 cells (40,0%) have expected count less than 5. The minimum expected count is 0,64.



Table E2.13: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about sharing suggestions in the context of the new curriculum

			I work with colleagues who listen if I have ideas about doing things better in the context of new curriculum					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	2	3	6	21	39	71
		% within province	2,8%	4,2%	8,5%	29,6%	54,9%	100%
	Sofala	Number	1	2	7	19	46	75
		% within province	1,3%	2,7%	9,3%	25,3%	61,3%	100%
	Maputo City	Number	1	5	13	38	18	75
		% within province	1,3%	6,7%	17,3%	50,7%	24,0%	100%
Total		Number	4	10	26	78	103	221
		% within province	1,8%	4,5%	11,8%	35,3%	46,6%	100%

Table E2.14: Chi-Square on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about sharing suggestions in the context of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8,903(a)	8	0,351
Likelihood Ratio	9,901	8	0,272
Linear-by-Linear Association	0,407	1	0,523
N of Valid Cases	221		

a 6 cells (40,0%) have expected count less than 5. The minimum expected count is 0,64.



Table E2.15: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' leadership in pedagogical domain

			My principal/ principal assistants/ learning cycle leader, learning area coordinator is an effective instructional leader					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	0	2	14	25	30	71
		% within province	0,0%	2,8%	19,7%	35,2%	42,3%	100,0%
	Sofala	Number	2	1	13	20	39	75
		% within province	2,7%	1,3%	17,3%	26,7%	52,0%	100,0%
	Maputo City	Number	6	4	13	34	18	75
		% within province	8,0%	5,3%	17,3%	45,3%	24,0%	100,0%
Total		Number	8	7	40	79	87	221
		% within province	3,6%	3,2%	18,1%	35,7%	39,4%	100,0%

Table E2.16: Chi-Square on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' leadership in implementation of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20,173(a)	8	0,010
Likelihood Ratio	22,232	8	0,005
Linear-by-Linear Association	7,316	1	0,007
N of Valid Cases	221		

a 6 cells (40,0%) have expected count less than 5. The minimum expected count is 2,25.

Table E2.17: comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their principals as effective communication facilitators in implementation of the new curriculum

			My principal/ principal assistants/ learning cycle leader, learning coordinator facilitates communication effectively					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	0	1	13	29	28	71
		% within province	0,0%	1,4%	18,3%	40,8%	39,4%	100,0%
	Sofala	Number	1	1	9	24	40	75
		% within province	1,3%	1,3%	12,0%	32,0%	53,3%	100,0%
	Maputo City	Number	0	7	12	27	29	75
		% within province	0,0%	9,3%	16,0%	36,0%	38,7%	100,0%
Total		Number	1	9	34	80	97	221
		% within province	0,5%	4,1%	15,4%	36,2%	43,9%	100,0%

Table E2.18: Chi-square on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their principals as effective communication facilitators in implementation of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13,735(a)	8	0,089
Likelihood Ratio	13,441	8	0,098
Linear-by-Linear Association	1,039	1	0,308
N of Valid Cases	221		

(a). 6 cells (40,0%) have expected count less than 5. The minimum expected count is 0,32.

Table E2.19: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' support in their work with students in curriculum implementation

			My principal/ principal assistants/ learning cycle leader, learning area coordinator supports me in my work with students in the context of the new curriculum					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	0	0	15	19	37	71
		% within province	0,0%	0,0%	21,1%	26,8%	52,1%	100,0%
	Sofala	Number	1	1	16	22	35	75
		% within province	1,3%	1,3%	21,3%	29,3%	46,7%	100,0%
	Maputo City	Number	1	8	15	31	20	75
		% within province	1,3%	10,7%	20,0%	41,3%	26,7%	100,0%
Total		Number	2	9	46	72	92	221
		% within province	0,9%	4,1%	20,8%	32,6%	41,6%	100,0%

Table E2.20: Chi-Square Tests on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' support in their work with students in curriculum implementation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22,375(a)	8	0,004
Likelihood Ratio	24,225	8	0,002
Linear-by-Linear Association	10,523	1	0,001
N of Valid Cases	221		

a 6 cells (40,0%) have expected count less than 5. The minimum expected count is 0,64.



Table E2.21: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' support of shared decision making in curriculum implementation

			My principal/ principal assistants/ learning cycle leader, learning area coordinator supports shared decision making					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	2	1	16	29	23	71
		% within province	2,8%	1,4%	22,5%	40,8%	32,4%	100%
	Sofala	Number	1	4	17	22	31	75
		% within province	1,3%	5,3%	22,7%	29,3%	41,3%	100%
	Maputo City	Number	2	3	18	31	21	75
		% within province	2,7%	4,0%	24,0%	41,3%	28,0%	100%
Total		Number	5	8	51	82	75	221
		% within province	2,3%	3,6%	23,1%	37,1%	33,9%	100%

Table E2.22: Chi-Square Tests on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' support of shared decision making in curriculum implementation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5,964(a)	8	0,651
Likelihood Ratio	6,263	8	0,618
Linear-by-Linear Association	0,461	1	0,497
N of Valid Cases	221		

a 6 cells (40,0%) have expected count less than 5. The minimum expected count is 1,61.



Table E2.23: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' openness allowing them to become effective instructional leaders in curriculum implementation

			My principal/ principal assistants/ learning cycle leader, learning area coordinator allows me to be effective instructional leader					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Sofala	Number	0	4	14	18	39	75
		% within province	0,0%	5,3%	18,7%	24,0%	52,0%	100,0%
	Maputo City	Number	4	4	20	32	15	75
		% within province	5,3%	5,3%	26,7%	42,7%	20,0%	100,0%
Total		Number	4	8	48	73	88	221
		% within province	1,8%	3,6%	21,7%	33,0%	39,8%	100,0%

Table E2.24: Chi-Square Tests on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' openness allowing them to become effective instructional leaders in curriculum implementation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28,194(a)	8	0,000
Likelihood Ratio	32,798	8	0,000
Linear-by-Linear Association	15,158	1	0,000
N of Valid Cases	221		

a 6 cells (40,0%) have expected count less than 5. The minimum expected count is 1,29.

Table E2.25: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' effectiveness in helping them to reach new curriculum vision

			My principal/ principal assistants/ learning cycle leader, learning area coordinator is effective in helping us to reach new curriculum vision					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	1	1	18	26	25	71
		% within province	1,4%	1,4%	25,4%	36,6%	35,2%	100%
	Sofala	Number	2	6	14	20	33	75
		% within province	2,7%	8,0%	18,7%	26,7%	44,0%	100%
	Maputo City	Number	2	5	16	32	20	75
		% within province	2,7%	6,7%	21,3%	42,7%	26,7%	100%
Total		Number	5	12	48	78	78	221
		% within province	2,3%	5,4%	21,7%	35,3%	35,3%	100%

Table E2.26: Chi-Square Tests on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' effectiveness in helping them to reach new curriculum vision

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10,298(a)	8	0,245
Likelihood Ratio	11,191	8	0,191
Linear-by-Linear Association	1,320	1	0,251
N of Valid Cases	221		

a 6 cells (40,0%) have expected count less than 5. The minimum expected count is 1,61.

Table E2.27: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about clarity of the new curriculum learning objectives and acquisition of basic skills

			I realize that the new curriculum has clear learning objectives and emphasizes the acquisition of basic skills					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	1	1	13	18	38	71
		% within province	1,4%	1,4%	18,3%	25,4%	53,5%	100%
	Sofala	Number	2	2	10	29	32	75
		% within province	2,7%	2,7%	13,3%	38,7%	42,7%	100%
	Maputo City	Number	11	10	14	28	12	75
		% within province	14,7%	13,3%	18,7%	37,3%	16,0%	100%
Total		Number	14	13	37	75	82	221
		% within province	6,3%	5,9%	16,7%	33,9%	37,1%	100%

Table E2.28: Chi-square on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about clarity of the new curriculum learning objectives and acquisition of basic skills

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	41,212(a)	8	0,000
Likelihood Ratio	42,172	8	0,000
Linear-by-Linear Association	28,466	1	0,000
N of Valid Cases	221		

a 6 cells (40,0%) have expected count less than 5. The minimum expected count is 4,18.

Table E2.29: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their effective professional development towards fulfilment of the new curriculum goals

			I realize that effective professional development is helpful in fulfillment of curriculum goals					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	1	3	15	25	27	71
		% within province	1,4%	4,2%	21,1%	35,2%	38,0%	100,0 %
	Sofala	Number	3	0	12	30	30	75
		% within province	4,0%	,0%	16,0%	40,0%	40,0%	100,0 %
	Maputo City	Number	4	11	23	27	10	75
		% within province	5,3%	14,7%	30,7%	36,0%	13,3%	100,0 %
Total		Number	8	14	50	82	67	221
		% within province	3,6%	6,3%	22,6%	37,1%	30,3%	100,0 %

Table E2.30: Chi-square Tests on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their effective professional development towards fulfilment of the new curriculum goals

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29,846(a)	8	0,000
Likelihood Ratio	34,172	8	0,000
Linear-by-Linear Association	15,343	1	0,000
N of Valid Cases	221		

a 6 cells (40,0%) have expected count less than 5. The minimum expected count is 2,57.

Table E2.31: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about student achievement increase in connection with active learning methods set up in the new curriculum

			I realize that student achievement can increase through active learning methods set up in the new curriculum					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	2	1	13	26	29	71
		% within province	2,8%	1,4%	18,3%	36,6%	40,8%	100%
	Sofala	Number	1	3	11	27	33	75
		% within province	1,3%	4,0%	14,7%	36,0%	44,0%	100%
	Maputo City	Number	6	9	14	32	14	75
		% within province	8,0%	12,0%	18,7%	42,7%	18,7%	100%
Total		Number	9	13	38	85	76	221
		% within province	4,1%	5,9%	17,2%	38,5%	34,4%	100%

Table E2.32: Chi-square on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about student achievement increase in connection with active learning methods set up in the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21,353(a)	8	0,006
Likelihood Ratio	22,144	8	0,005
Linear-by-Linear Association	11,720	1	0,001
N of Valid Cases	221		

a 6 cells (40,0%) have expected count less than 5. The minimum expected count is 2,89.



Table E2.33: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about student achievement data as important tool for improvement of student learning

			I realize that student achievement data are important tool for improvement of student learning					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	1	2	14	26	28	71
		% within province	1,4%	2,8%	19,7%	36,6%	39,4%	100,0%
	Sofala	Number	0	4	10	38	23	75
		% within province	0,0%	5,3%	13,3%	50,7%	30,7%	100,0%
	Maputo City	Number	10	7	19	22	17	75
		% within province	13,3%	9,3%	25,3%	29,3%	22,7%	100,0%
Total		Number	11	13	43	86	68	221
		% within province	5,0%	5,9%	19,5%	38,9%	30,8%	100,0%

Table E2.34: Chi-square on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about student achievement data as important tool for improvement of student learning

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29,402(a)	8	0,000
Likelihood Ratio	30,575	8	0,000
Linear-by-Linear Association	16,112	1	0,000
N of Valid Cases	221		

a 6 cells (40,0%) have expected count less than 5. The minimum expected count is 3,53.

Table E2.35: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about the need of effective parents' involvement and other stakeholders for successful implementation of the new curriculum

			I realize that effective parents' involvement and other stakeholders is needed for successful implementation of the new curriculum					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	1	1	14	11	44	71
		% within province	1,4%	1,4%	19,7%	15,5%	62,0%	100,0 %
	Sofala	Number	2	2	12	14	45	75
		% within province	2,7%	2,7%	16,0%	18,7%	60,0%	100,0 %
	Maputo City	Number	1	2	7	26	39	75
		% within province	1,3%	2,7%	9,3%	34,7%	52,0%	100,0 %
Total		Number	4	5	33	51	128	221
		% within province	1,8%	2,3%	14,9%	23,1%	57,9%	100,0 %

Table E2.36: Chi-square Tests on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about the need of effective parents' involvement and other stakeholders for successful implementation of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10,998(a)	8	0,202
Likelihood Ratio	10,847	8	0,211
Linear-by-Linear Association	0,014	1	0,907
N of Valid Cases	221		

a 6 cells (40,0%) have expected count less than 5. The minimum expected count is 1,29.

Table E2.37: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their professional opportunities in the context of the new curriculum implementation

			I have the opportunity to develop my teaching skills individually and co-operating with other colleagues on new curriculum					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	1	1	13	16	40	71
		% within province	1,4%	1,4%	18,3%	22,5%	56,3%	100%
	Sofala	Number	1	6	11	21	36	75
		% within province	1,3%	8,0%	14,7%	28,0%	48,0%	100%
	Maputo City	Number	4	5	3	30	33	75
		% within province	5,3%	6,7%	4,0%	40,0%	44,0%	100%
Total		Number	6	12	27	67	109	221
		% within province	2,7%	5,4%	12,2%	30,3%	49,3%	100%

Table E2.38: Chi-square Tests on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their professional opportunities in the context of the new curriculum implementation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17,813(a)	8	0,023
Likelihood Ratio	19,462	8	0,013
Linear-by-Linear Association	1,416	1	0,234
N of Valid Cases	221		

a 6 cells (40,0%) have expected count less than 5. The minimum expected count is 1,93.

Table E2.39: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their opportunities to grow professionally in the context of the new curriculum implementation

			I have opportunity to grow professionally in the context of the new curriculum implementation					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	3	3	15	14	36	71
		% within province	4,2%	4,2%	21,1%	19,7%	50,7%	100%
	Sofala	Number	2	2	11	20	40	75
		% within province	2,7%	2,7%	14,7%	26,7%	53,3%	100%
	Maputo City	Number	8	1	10	22	34	75
		% within province	10,7%	1,3%	13,3%	29,3%	45,3%	100%
Total		Number	13	6	36	56	110	221
			5,9%	2,7%	16,3%	25,3%	49,8%	100%

Table E2.40: Chi-square on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their opportunities to grow professionally in the context of the new curriculum implementation

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9,146(a)	8	0,330
Likelihood Ratio	8,984	8	0,344
Linear-by-Linear Association	0,375	1	0,540
N of Valid Cases	221		

a. 6 cells (40,0%) have expected count less than 5. The minimum expected count is

1,93.



The attitudes and beliefs of surveyed teachers towards the implementation of the new curriculum

Table E2a.1: Comparison of expressed school ownership feeling by teachers from the three provinces who participated in the investigation (after merging cells together with an expected frequency less than 5)

			I feel like I belong at this school			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	7	23	41	71
		% within province	9,9%	32,4%	57,7%	100,0%
	Sofala	Number	13	22	40	75
		% within province	17,3%	29,3%	53,3%	100,0%
	Maputo City	Number	20	21	34	75
		% within province	26,7%	28,0%	45,3%	100,0%
Total		Number	40	66	115	221
		% within province	18,1%	29,9%	52,0%	100,0%

Table E2a.2: Chi-square tests on comparison of expressed school ownership feeling by teachers from the three provinces who participated in the investigation (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7,093(a)	4	0,131
Likelihood Ratio	7,247	4	0,123
Linear-by-Linear Association	5,308	1	0,021
N of Valid Cases	221		

(a) 0 cells (0,0%) have expected count less than 5. The minimum expected count is 12,85.



Table E2a.11: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their mutual respect within schools in implementation of the new curriculum (after merging cells together with an expected frequency less than 5)

			I work with colleagues who treat me with respect			Total
			Neutral	Agree	Strongly Agree	
Province	Niassa	Number	7	25	39	71
		% within province	9,9%	35,2%	54,9%	100,0%
	Sofala	Number	9	14	52	75
		% within province	12,0%	18,7%	69,3%	100,0%
	Maputo City	Number	10	27	38	75
		% within province	13,3%	36,0%	50,7%	100,0%
Total		Number	26	66	129	221
		% within province	11,8%	29,9%	58,4%	100,0%

Table E2a.12 Chi-Square on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their mutual respect within schools in implementation of the new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7,604(a)	4	0,107
Likelihood Ratio	7,955	4	0,093
Linear-by-Linear Association	0,485	1	0,486
N of Valid Cases	221		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 8,35.

Table E2a.13: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about sharing suggestions in the context of the new curriculum (after merging cells together with an expected frequency less than 5)

			I work with colleagues who listen if I have ideas about doing things better in the context of the new curriculum			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	11	21	39	71
		% within province	15,5%	29,6%	54,9%	
	Sofala	Number	10	19	46	75
		% within province	13,3%	25,3%	61,3%	
	Maputo City	Number	19	38	18	75
		% within province	25,3%	50,7%	24,0%	
Total		Number	40	78	103	221
		% within province	18,1%	35,3%	46,6%	100,0%

Table E2a.14: Chi-Square on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about sharing suggestions in the context of the new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23,933(a)	4	0,000
Likelihood Ratio	24,885	4	0,000
Linear-by-Linear Association	10,953	1	0,001
N of Valid Cases	221		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 12,85.

Table E2a.15: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' leadership in pedagogical domain (after merging cells together with an expected frequency less than 5)

			My principal/ principal assistants/ learning cycle leader, learning area coordinator is an effective instructional leader			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	16	25	30	71
		% within province	22,5%	35,2%	42,3%	100,0%
	Sofala	Number	16	20	39	75
		% within province	21,3%	26,7%	52,0%	100,0%
	Maputo City	Number	23	34	18	75
		% within province	30,7%	45,3%	24,0%	100,0%
Total		Number	55	79	87	221
		% within province	24,9%	35,7%	39,4%	100,0%

Table E2a.16: Chi-Square on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' leadership in implementation of the new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,899(a)	4	0,012
Likelihood Ratio	13,321	4	0,010
Linear-by-Linear Association	4,207	1	0,040
N of Valid Cases	221		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 17,67.

Table E2a.17: comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their principals as effective communication facilitators in implementation of the new curriculum (after merging cells together with an expected frequency less than 5)

			My principal/ principal assistants/ learning cycle leader, learning coordinator facilitates communication effectively			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	14	29	28	71
		% within province	19,7%	40,8%	39,4%	100,0%
	Sofala	Number	11	24	40	75
		% within province	14,7%	32,0%	53,3%	100,0%
	Maputo City	Number	19	27	29	75
		% within province	25,3%	36,0%	38,7%	100,0%
Total		Number	44	80	97	221
		% within province	19,9%	36,2%	43,9%	100,0%

Table E2a.18: Chi-square on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their principals as effective communication facilitators in implementation of the new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5,245(a)	4	0,263
Likelihood Ratio	5,192	4	0,268
Linear-by-Linear Association	0,289	1	0,591
N of Valid Cases	221		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 14,14.



Table E2a.19: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' support in their work with students in curriculum implementation (after merging cells together with an expected frequency less than 5)

			My principal/ principal assistants/ learning cycle leader, learning area coordinator supports me in my work with students in the context of the new curriculum			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	15	19	37	71
		% within province	21,1%	26,8%	52,1%	100,0%
	Sofala	Number	18	22	35	75
		% within province	24,0%	29,3%	46,7%	100,0%
	Maputo City	Number	24	31	20	75
		% within province	32,0%	41,3%	26,7%	100,0%
Total		Number	57	72	92	221
		% within province	25,8%	32,6%	41,6%	100,0%

Table E2a.20: Chi-Square Tests on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' support in their work with students in curriculum implementation (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10,923(a)	4	0,027
Likelihood Ratio	11,239	4	0,024
Linear-by-Linear Association	7,455	1	0,006
N of Valid Cases	221		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 18,31.

Table E2a.21: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' support of shared decision making in curriculum implementation (after merging cells together with an expected frequency less than 5)

			My principal/ principal assistants/ learning cycle leader, learning area coordinator supports shared decision making			Total
			Neutral	Agree	Strongly Agree	
provin ce	Niassa	Number	19	29	23	71
		% within province	26,8%	40,8%	32,4%	100,0%
	Sofala	Number	22	22	31	75
		% within province	29,3%	29,3%	41,3%	100,0%
	Maputo City	Number	23	31	21	75
		% within province	30,7%	41,3%	28,0%	100,0%
Total		Number	64	82	75	221
		% within province	29,0%	37,1%	33,9%	100,0%

Table E2a.22: Chi-Square Tests on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' support of shared decision making in curriculum implementation (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4,085(a)	4	0,395
Likelihood Ratio	4,132	4	0,388
Linear-by-Linear Association	0,418	1	0,518
N of Valid Cases	221		

(a). 0 cells (0,0%) have expected count less than 5. The minimum expected count is 20,56 .



Table E2a.23: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' openness allowing them to become effective instructional leaders in curriculum implementation

			My principal/ principal assistants/ learning cycle leader, learning area coordinator allows me to be effective instructional leader			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	14	23	34	71
		% within province	19,7%	32,4%	47,9%	100,0%
	Sofala	Number	18	18	39	75
		% within province	24,0%	24,0%	52,0%	100,0%
	Maputo City	Number	28	32	15	75
		% within province	37,3%	42,7%	20,0%	100,0%
Total		Number	60	73	88	221
		% within province	27,1%	33,0%	39,8%	100,0%

Table E2a.24: Chi-Square Tests on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' openness allowing them to become effective instructional leaders in curriculum implementation (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19,906(a)	4	0,001
Likelihood Ratio	21,137	4	0,000
Linear-by-Linear Association	11,717	1	0,001
N of Valid Cases	221		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 19,28.



Table E2a.25: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' effectiveness in helping them to reach new curriculum vision (after merging cells together with an expected frequency less than 5)

			My principal/ principal assistants/ learning cycle leader, learning area coordinator is effective in helping us to reach new curriculum vision			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	20	26	25	71
		% within province	28,2%	36,6%	35,2%	100,0%
	Sofala	Number	22	20	33	75
		% within province	29,3%	26,7%	44,0%	100,0%
	Maputo City	Number	23	32	20	75
		% within province	30,7%	42,7%	26,7%	100,0%
Total		Number	65	78	78	221
		% within province	29,4%	35,3%	35,3%	100,0%

Table E2a.26: Chi-Square Tests on comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about principals' effectiveness in helping them to reach new curriculum vision (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6,042(a)	4	0,196
Likelihood Ratio	6,145	4	0,189
Linear-by-Linear Association	0,719	1	0,397
N of Valid Cases	221		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 20,88.



Table E2a.27: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about clarity of the new curriculum learning objectives and acquisition of basic skills (after merging cells together with an expected frequency less than 5)

		I realize that the new curriculum has clear learning objectives and emphasizes the acquisition of basic skills			Total	
		Neutral	Agree	Strongly Agree		
province	Niassa	Number	15	18	38	71
		% within province	21,1%	25,4%	53,5%	100,0%
	Sofala	Number	14	29	32	75
		% within province	18,7%	38,7%	42,7%	100,0%
	Maputo City	Number	35	28	12	75
		% within province	46,7%	37,3%	16,0%	100,0%
Total		Number	64	75	82	221
		% within province	29,0%	33,9%	37,1%	100,0%

Table E2a.28: Chi-square on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about clarity of the new curriculum learning objectives and acquisition of basic skills (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29,445(a)	4	0,000
Likelihood Ratio	30,650	4	0,000
Linear-by-Linear Association	22,385	1	0,000
N of Valid Cases	221		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 20,56.



Table E2a.29: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their effective professional development towards fulfilment of the new curriculum goals (after merging cells together with an expected frequency less than 5)

			I realize that effective professional development is helpful in fulfillment of curriculum goals			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	19	25	27	71
		% within province	26,8%	35,2%	38,0%	100,0%
	Sofala	Number	15	30	30	75
		% within province	20,0%	40,0%	40,0%	100,0%
	Maputo City	Number	38	27	10	75
		% within province	50,7%	36,0%	13,3%	100,0%
Total		Number	72	82	67	221
		% within province	32,6%	37,1%	30,3%	100,0%

Table E2a.30: Chi-square Tests on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their effective professional development towards fulfilment of the new curriculum goals (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23,023(a)	4	0,000
Likelihood Ratio	24,147	4	0,000
Linear-by-Linear Association	13,997	1	0,000
N of Valid Cases	221		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 21,52.



Table E2a.31: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about student achievement increase in connection with active learning methods set up in the new curriculum (after merging cells together with an expected frequency less than 5)

			I realize that student achievement can increase through active learning methods set up in the new curriculum			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	16	26	29	71
		% within province	22,5%	36,6%	40,8%	100,0%
	Sofala	Number	15	27	33	75
		% within province	20,0%	36,0%	44,0%	100,0%
	Maputo City	Number	29	32	14	75
		% within province	38,7%	42,7%	18,7%	100,0%
Total		Number	60	85	76	221
		% within province	27,1%	38,5%	34,4%	100,0%

Table E2a.32: Chi-square on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about student achievement increase in connection with active learning methods set up in the new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14,425(a)	4	0,006
Likelihood Ratio	15,034	4	0,005
Linear-by-Linear Association	8,948	1	0,003
N of Valid Cases	221		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 19,28.

Table E2a.33: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about student achievement data as important tool for improvement of student learning (after merging cells together with an expected frequency less than 5)

			I realize that student achievement data are important tool for improvement of student learning			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	17	26	28	71
		% within province	23,9%	36,6%	39,4%	100,0%
	Sofala	Number	14	38	23	75
		% within province	18,7%	50,7%	30,7%	100,0%
	Maputo City	Number	36	22	17	75
		% within province	48,0%	29,3%	22,7%	100,0%
Total		Number	67	86	68	221
		% within province	30,3%	38,9%	30,8%	100,0%

Table E2a.34: Chi-square on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about student achievement data as important tool for improvement of student learning (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19,906(a)	4	0,001
Likelihood Ratio	19,296	4	0,001
Linear-by-Linear Association	10,063	1	0,002
N of Valid Cases	221		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 21,52.

Table E2a.35: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about the need of effective parents' involvement and other stakeholders for successful implementation of the new curriculum (after merging cells together with an expected frequency less than 5)

			I realize that effective parents' involvement and other stakeholders is needed for successful implementation of the new curriculum			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	16	11	44	71
		% within province	22,5%	15,5%	62,0%	100,0%
	Sofala	Number	16	14	45	75
		% within province	21,3%	18,7%	60,0%	100,0%
	Maputo City	Number	10	26	39	75
		% within province	13,3%	34,7%	52,0%	100,0%
Total		Number	42	51	128	221
		% within province	19,0%	23,1%	57,9%	100,0%

Table E2a.36: Chi-square Tests on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about the need of effective parents' involvement and other stakeholders for successful implementation of the new curriculum (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9,427(a)	4	0,051
Likelihood Ratio	9,243	4	0,055
Linear-by-Linear Association	0,003	1	0,953
N of Valid Cases	221		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 13,49.

Table E2a.37: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their professional opportunities in the context of the new curriculum implementation (after merging cells together with an expected frequency less than 5)

			I have the opportunity to develop my teaching skills individually and co-operating with other colleagues on new curriculum			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	15	16	40	71
		% within province	21,1%	22,5%	56,3%	100,0%
	Sofala	Number	18	21	36	75
		% within province	24,0%	28,0%	48,0%	100,0%
	Maputo City	Number	12	30	33	75
		% within province	16,0%	40,0%	44,0%	100,0%
Total	Number		45	67	109	221
	% within province		20,4%	30,3%	49,3%	100,0%

Table E2a.38: Chi-square Tests on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their professional opportunities in the context of the new curriculum implementation (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6,245(a)	4	0,182
Likelihood Ratio	6,189	4	0,185
Linear-by-Linear Association	0,296	1	0,586
N of Valid Cases	221		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 14,46.



Table E2a.39: Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their opportunities to grow professionally in the context of the new curriculum implementation (after merging cells together with an expected frequency less than 5)

			I have opportunity to grow professionally in the context of the new curriculum implementation			Total
			Neutral	Agree	Strongly Agree	
province	Niassa	Number	21	14	36	71
		% within province	29,6%	19,7%	50,7%	100,0%
	Sofala	Number	15	20	40	75
		% within province	20,0%	26,7%	53,3%	100,0%
	Maputo City	Number	19	22	34	75
		% within province	25,3%	29,3%	45,3%	100,0%
Total		Number	55	56	110	221
		% within province	24,9%	25,3%	49,8%	100,0%

Table E2a.40: Chi-square on Comparison of opinions expressed by surveyed teachers from the three provinces who participated in the study about their opportunities to grow professionally in the context of the new curriculum implementation (after merging cells together with an expected frequency less than 5)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3,263(a)	4	0,515
Likelihood Ratio	3,334	4	0,504
Linear-by-Linear Association	0,010	1	0,921
N of Valid Cases	221		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 17,67.



Students' reliability of a scale

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)			Mean	Std Dev	Cases
1.	I9.1;	V44	3,9342	1,2998	2705,0
2.	I9.2;	V45	4,0603	1,1053	2705,0
3.	I9.3;	V46	3,7043	1,3496	2705,0
4.	I9.4;	V47	4,2177	,9674	2705,0
5.	I9.5;	V48	4,1616	1,1011	2705,0
6.	I9.6;	V49	3,9283	1,2540	2705,0
7.	I9.7;	V50	4,0325	1,1630	2705,0
8.	I9.8;	V51	4,1327	1,0945	2705,0
9.	I9.9;	V52	3,6865	1,2832	2705,0
10.	I9.10;	V53	3,4407	1,3396	2705,0
11.	I9.11;	V54	3,9575	1,2883	2705,0
12.	I9.12;	V55	3,6000	1,3191	2705,0
13.	I9.13;	V56	4,5065	,8383	2705,0
14.	I9.14;	V57	4,0174	1,0278	2705,0
15.	I9.15;	V58	3,9564	1,2609	2705,0
16.	I9.16;	V59	3,9065	1,2355	2705,0
17.	I9.17;	V60	4,3105	1,0061	2705,0
18.	I9.18;	V61	4,1224	1,0332	2705,0
19.	I9.19;	V62	4,6532	,7156	2705,0
20.	I9.20;	V63	4,1734	,9977	2705,0
21.	I9.21;	V64	4,1512	1,0279	2705,0
22.	I9.22;	V65	3,9201	1,1806	2705,0
23.	I9.23;	V66	4,1567	1,0522	2705,0
24.	I9.24;	V67	4,0776	1,0480	2705,0
25.	I9.25;	V68	3,3823	1,3635	2705,0
26.	I9.26.1;	V69	4,1856	1,0181	2705,0
27.	I9.26.2;	V70	4,1401	1,0679	2705,0
28.	I9.26.3;	V71	3,7360	1,2545	2705,0
29.	I9.26.4;	V72	4,0776	1,0561	2705,0
30.	I9.26.5;	V73	3,7479	1,1780	2705,0
31.	I9.26.6;	V74	3,8000	1,1958	2705,0
32.	I9.26.7;	V75	3,8226	1,1806	2705,0
33.	I9.26.8;	V76	3,6229	1,2280	2705,0
34.	I9.26.9;	V77	3,9882	1,1010	2705,0
35.	I9.26.10;	V78	4,3401	,9317	2705,0
36.	I9.26.11;	V79	3,7941	1,2257	2705,0
37.	I9.27.1;	V80	4,4311	,8451	2705,0
38.	I9.27.2;	V81	4,4854	,8167	2705,0
39.	I9.27.3;	V82	4,3534	,8888	2705,0
40.	I9.27.4;	V83	4,1738	,9716	2705,0
41.	I9.27.5;	V84	3,9745	1,1489	2705,0
42.	I9.28.1;	V85	3,2444	1,5117	2705,0
43.	I9.28.2;	V86	3,2688	1,4092	2705,0
44.	I9.28.3;	V87	3,7941	1,2941	2705,0
45.	I9.28.4;	V88	3,6355	1,3929	2705,0
46.	I9.28.5;	V89	3,8532	1,3182	2705,0
47.	I9.28.6;	V90	3,5697	1,2956	2705,0
48.	I9.29.1;	V91	3,7142	1,2290	2705,0



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R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)						
			Mean	Std Dev	Cases	
49.	I9.29.2;	V91	3,8384	1,1755	2705,0	
50.	I9.29.3;	V92	3,8799	1,1481	2705,0	
51.	I9.29.4;	V93	3,8950	1,2522	2705,0	
52.	I9.30.1;	V94	4,6588	,7267	2705,0	
53.	I9.30.2;	V95	3,5386	1,1730	2705,0	
54.	I9.30.3;	V96	4,0909	1,0430	2705,0	
55.	I9.30.4;	V97	4,0662	1,0046	2705,0	
56.	I9.30.5;	V98	4,1793	,9896	2705,0	
57.	I9.30.6;	V99	4,5963	,7743	2705,0	
58.	I9.30.7;	V100	4,3671	,8670	2705,0	
59.	I9.30.8;	V101	3,7793	1,1360	2705,0	
60.	I9.30.9;	V102	3,8902	1,0838	2705,0	
61.	I9.30.10;	V103	3,9283	1,0845	2705,0	
62.	I9.30.11;	V104	4,1590	1,0161	2705,0	
63.	I9.31.1;	V105	4,6396	,7604	2705,0	
64.	I9.31.2;	V106	3,4773	1,1391	2705,0	
65.	I9.31.3;	V107	4,1183	1,0342	2705,0	
66.	I9.31.4;	V108	4,0148	1,0341	2705,0	
67.	I9.31.5;	V109	4,1501	,9939	2705,0	
68.	I9.31.6;	V110	4,4921	,8754	2705,0	
69.	I9.31.7;	V111	4,3305	,8831	2705,0	
70.	I9.31.8;	V112	3,7320	1,1504	2705,0	
71.	I9.31.9;	V113	3,8699	1,0974	2705,0	
72.	I9.31.10;	V114	3,9405	1,0905	2705,0	
73.	P9.31.11;	V115	4,1560	1,0339	2705,0	
74.	P9.32.1;	V116	4,5712	,8423	2705,0	
75.	P9.32.2;	V117	2,3216	1,4208	2705,0	
Statistics for			Mean	Variance	Std Dev	N of Variables
SCALE			298,6244	1079,9802	32,8631	75

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R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)					
Item-total Statistics					
		Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
I9.1;	V44	294,6902	1046,8899	,3733	,9247
I9.2;	V45	294,5641	1055,0677	,3299	,9250
I9.3;	V46	294,9201	1052,0306	,2984	,9253
I9.4;	V47	294,4067	1055,5661	,3735	,9247



I9.5;	V48	294,4628	1052,5497	,3670	,9247
I9.6;	V49	294,6961	1051,6243	,3293	,9250
I9.7;	V50	294,5919	1048,8607	,3952	,9246
I9.8;	V51	294,4917	1050,2426	,4023	,9245
I9.9;	V52	294,9379	1047,8231	,3673	,9248
I9.10;	V53	295,1837	1051,1915	,3107	,9252
I9.11;	V54	294,6669	1054,5196	,2845	,9253
I9.12;	V55	295,0244	1048,9987	,3422	,9250
I9.13;	V56	294,1179	1058,8903	,3737	,9248
I9.14;	V57	294,6070	1055,9502	,3439	,9249
I9.15;	V58	294,6680	1053,2810	,3068	,9252
I9.16;	V59	294,7179	1048,6131	,3729	,9247
I9.17;	V60	294,3139	1049,2184	,4564	,9243
I9.18;	V61	294,5020	1048,1635	,4596	,9242
I9.19;	V62	293,9712	1061,6552	,3820	,9248
I9.20;	V63	294,4510	1054,9829	,3703	,9247
I9.21;	V64	294,4732	1057,0334	,3275	,9250
I9.22;	V65	294,7043	1048,1129	,3987	,9245
I9.23;	V66	294,4677	1051,8023	,3967	,9246
I9.24;	V67	294,5468	1053,6569	,3708	,9247
I9.25;	V68	295,2421	1046,4240	,3593	,9249
I9.26.1;	V69	294,4388	1052,8403	,3951	,9246
I9.26.2;	V70	294,4843	1052,4666	,3806	,9247
I9.26.3;	V71	294,8884	1047,2612	,3836	,9246
I9.26.4;	V72	294,5468	1045,9912	,4812	,9241
I9.26.5;	V73	294,8765	1043,2895	,4639	,9241
I9.26.6;	V74	294,8244	1045,1870	,4315	,9243
I9.26.7;	V75	294,8018	1048,6464	,3916	,9246
I9.26.8;	V76	295,0015	1045,6427	,4134	,9244
I9.26.9;	V77	294,6362	1046,5644	,4521	,9242
I9.26.10;	V78	294,2843	1051,8300	,4515	,9244
I9.26.11;	V79	294,8303	1048,4094	,3788	,9247
I9.27.1;	V80	294,1933	1055,1124	,4399	,9245
I9.27.2;	V81	294,1390	1055,1833	,4548	,9244
I9.27.3;	V82	294,2710	1055,6392	,4078	,9246
I9.27.4;	V83	294,4506	1050,6478	,4507	,9243
I9.27.5;	V84	294,6499	1047,6655	,4167	,9244

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R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Item-total Statistics

		Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Alpha if Item Deleted
I9.28.1;	V85	295,3800	1055,3844	,2271	,9260
I9.28.2;	V86	295,3556	1053,8794	,2636	,9256
I9.28.3;	V87	294,8303	1052,3022	,3097	,9252
I9.28.4;	V88	294,9889	1053,6951	,2692	,9255
I9.28.5;	V89	294,7712	1056,0441	,2591	,9255
I9.28.6;	V90	295,0547	1053,1287	,2994	,9252



I9.29.1;	V91	294,9102	1052,0322	,3316	,9250
I9.29.2;	V92	294,7860	1050,1750	,3731	,9247
I9.29.3;	V93	294,7445	1050,3079	,3810	,9247
I9.29.4;	V94	294,7294	1055,8328	,2775	,9254
I9.30.1;	V95	293,9656	1060,1567	,4077	,9247
I9.30.2;	V96	295,0858	1065,0296	,1773	,9259
I9.30.3;	V97	294,5335	1054,7260	,3567	,9248
I9.30.4;	V98	294,5582	1052,5278	,4057	,9245
I9.30.5;	V99	294,4451	1051,9017	,4222	,9245
I9.30.6;	V100	294,0281	1060,1923	,3805	,9248
I9.30.7;	V101	294,2573	1053,1431	,4636	,9244
I9.30.8;	V102	294,8451	1046,2138	,4419	,9243
I9.30.9;	V103	294,7342	1046,7611	,4569	,9242
I9.30.10;	V104	294,6961	1046,3965	,4619	,9242
I9.30.11;	V105	294,4654	1050,2733	,4354	,9244
I9.31.1;	V106	293,9848	1059,0734	,4107	,9247
I9.31.2;	V107	295,1471	1062,2794	,2209	,9256
I9.31.3;	V108	294,5061	1055,5540	,3476	,9249
I9.31.4;	V109	294,6096	1049,6168	,4372	,9244
I9.31.5;	V110	294,4743	1050,9477	,4352	,9244
I9.31.6;	V111	294,1323	1058,5712	,3624	,9248
I9.31.7;	V112	294,2939	1054,6943	,4273	,9245
I9.31.8;	V113	294,8924	1046,1301	,4371	,9243
I9.31.9;	V114	294,7545	1046,0913	,4604	,9242
I9.31.10;	V115	294,6839	1047,4884	,4435	,9243
I9.31.11;	V116	294,4684	1051,4333	,4098	,9245
I9.32.1;	V117	294,0532	1061,4136	,3254	,9250
I9.32.2;	V118	296,3028	1073,2038	,0511	,9272

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R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Reliability Coefficients

N of Cases = 2705,0

N of Items = 75

Alpha = ,9257



Perceptions, beliefs and attitudes of learners regarding the new curriculum

Table F2.1: Comparison of opinions expressed by surveyed students from the three provinces who participated in the study about safety in their schools

			I feel safe at this school					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	24	10	19	80	251	384
		% within province	6,3%	2,6%	4,9%	20,8%	65,4%	100%
	Sofala	Number	84	77	83	424	651	1319
		% within province	6,4%	5,8%	6,3%	32,1%	49,4%	100%
	Maputo City	Number	131	147	141	235	348	1002
		% within province	13,1%	14,7%	14,1%	23,5%	34,7%	100%
Total		Number	239	234	243	739	1250	2705
		% within province	8,8%	8,7%	9,0%	27,3%	46,2%	100%

Table F2.2: Chi-Square Tests on comparison of opinions expressed by surveyed students from the three provinces who participated in the study about safety in their schools

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	233,633(a)	8	0,000
Likelihood Ratio	230,432	8	0,000
Linear-by-Linear Association	159,591	1	0,000
N of Valid Cases	2705		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 33,22

Table F2.3: Comparison of opinions expressed by surveyed students from the three provinces who participated in the study about safety in their schools by gender

			I feel safe at this school					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	149	122	124	392	682	1469
		% within gender	10,1%	8,3%	8,4%	26,7%	46,4%	100%
	Female	Number	90	112	119	347	568	1236
		% within gender	7,3%	9,1%	9,6%	28,1%	46,0%	100%
Total		Number	239	234	243	739	1250	2705
		% within gender	8,8%	8,7%	9,0%	27,3%	46,2%	100%

Table F2.4: Chi-Square Tests on comparison of opinions expressed by surveyed students from the three provinces who participated in the study about safety in their schools by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8,223(a)	4	0,084
Likelihood Ratio	8,305	4	0,081
Linear-by-Linear Association	1,164	1	0,281
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 106,92.

Table F2.5: Comparison of levels of sense of belonging in schools revealed by students from the three provinces who participated in the study

			I feel like I belong at this school					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	12	29	24	120	199	384
		% within province	3,1%	7,6%	6,3%	31,3%	51,8%	100%
	Sofala	Number	67	57	92	499	604	1319
		% within province	5,1%	4,3%	7,0%	37,8%	45,8%	100%
	Maputo City	Number	53	79	172	324	374	1002
		% within province	5,3%	7,9%	17,2%	32,3%	37,3%	100%
Total		Number	132	165	288	943	1177	2705
		% within province	4,9%	6,1%	10,6%	34,9%	43,5%	100%

Table F2.6: Chi-square Tests on comparison of levels of sense of belonging in schools revealed by students from the three provinces who participated in the study

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	103,035(a)	8	0,000
Likelihood Ratio	100,948	8	0,000
Linear-by-Linear Association	35,775	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 18,74.

Table F2.7: Comparison of opinions of students from the three provinces who participated in the study about what extent they were felt challenged at their schools

			I feel challenged at this school					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	17	26	39	80	222	384
		% within province	4,4%	6,8%	10,2%	20,8%	57,8%	100%
	Sofala	Number	122	124	140	404	529	1319
		% within province	9,2%	9,4%	10,6%	30,6%	40,1%	100%
	Maputo City	Number	146	150	192	239	275	1002
		% within province	14,6%	15,0%	19,2%	23,9%	27,4%	100%
Total		Number	285	300	371	723	1026	2705
		% within province	10,5%	11,1%	13,7%	26,7%	37,9%	100%

Table F2.8: Chi-Square Tests on comparison of opinions of students from the three provinces who participated in the study about what extent they were felt challenged at their schools

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	175,388(a)	8	0,000
Likelihood Ratio	173,959	8	0,000
Linear-by-Linear Association	134,493	1	0,000
N of Valid Cases	2705		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 0,46.

Table F2.9: Comparison of opinions expressed by the students from the three provinces who participated in the study about their understanding of how to apply what they learn in the context of the new curriculum to real life situations

			I understand how to apply what I learn to real life					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	16	9	29	100	230	384
		% within province	4,2%	2,3%	7,6%	26,0%	59,9%	100%
	Sofala	Number	40	49	94	525	611	1319
		% within province	3,0%	3,7%	7,1%	39,8%	46,2%	100%
	Maputo City	Number	26	32	150	347	447	1002
		% within province	2,6%	3,2%	15,0%	34,6%	44,6%	100%
Total		Number	82	90	273	972	1288	2705
		% within province	3,0%	3,3%	10,1%	35,9%	47,6%	100%



Table F2.10: Chi-Square Tests on Comparison of opinions expressed by the students from the three provinces who participated in the study about their understanding of how to apply what they learn in the context of the new curriculum to real life situations

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	72,550(a)	8	,000
Likelihood Ratio	71,049	8	,000
Linear-by-Linear Association	11,266	1	,001
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 11,64.

Table F2.11: Comparison of opinions expressed by students from three provinces who participated in the study about encouragement from their teachers to assess the quality of their own

			Teachers encourage me to assess the quality of my own work					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Count	29	23	31	89	212	384
		% within province	7,6%	6,0%	8,1%	23,2%	55,2%	100,0%
	Sofala	Count	69	63	98	439	650	1319
		% within province	5,2%	4,8%	7,4%	33,3%	49,3%	100,0%
	Maputo City	Count	29	72	91	318	492	1002
		% within province	2,9%	7,2%	9,1%	31,7%	49,1%	100,0%
Total		Count	127	158	220	846	1354	2705
		% within province	4,7%	5,8%	8,1%	31,3%	50,1%	100,0%

school work

Table F2.12: Chi-Square Test on Comparison of opinions expressed by students from three provinces who participated in the study about encouragement from their teachers to assess the quality of their own school work

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34,191(a)	8	0,000
Likelihood Ratio	34,862	8	0,000
Linear-by-Linear Association	0,325	1	0,568
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 18,03.

Table F2.13: Comparison of opinions expressed by students from the three provinces who participated in the study about self-assessment of their own school work

			I assess my own work					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	31	32	25	92	204	384
		% within province	8,1%	8,3%	6,5%	24,0%	53,1%	100%
	Sofala	Number	77	71	121	458	592	1319
		% within province	5,8%	5,4%	9,2%	34,7%	44,9%	100%
	Maputo City	Number	117	96	137	286	366	1002
		% within province	11,7%	9,6%	13,7%	28,5%	36,5%	100%
Total		Number	225	199	283	836	1162	2705
		% within province	8,3%	7,4%	10,5%	30,9%	43,0%	100%

Table F2. 14: Chi-square Tests on comparison of opinions expressed by students from the three provinces who participated in the study about self-assessment of their own school work

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	89,340(a)	8	0,000
Likelihood Ratio	89,347	8	0,000
Linear-by-Linear Association	43,462	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 28,25.

Table F2.15: Comparison of opinions expressed by students from the three provinces who participated in the study about student-teacher relationships at their schools

			Teachers treat me with respect					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	5	9	34	85	251	384
		% within province	1,3%	2,3%	8,9%	22,1%	65,4%	100,0%
	Sofala	Number	94	104	144	417	560	1319
		% within province	7,1%	7,9%	10,9%	31,6%	42,5%	100,0%
	Maputo City	Number	55	63	156	303	425	1002
		% within province	5,5%	6,3%	15,6%	30,2%	42,4%	100,0%
Total		Number	154	176	334	805	1236	2705
		% within province	5,7%	6,5%	12,3%	29,8%	45,7%	100,0%



Table F2.16: Chi-square Tests on comparison of opinions expressed by students from the three provinces who participated in the study about student-teacher relationships at their schools

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	93,396(a)	8	0,000
Likelihood Ratio	98,959	8	0,000
Linear-by-Linear Association	30,366	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 21,86.

Table F2.17: Comparison of feelings revealed by students from the three provinces who participated in the study about administrators' relationships in dealing with them at their schools

			School administrators treat me with respect					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	7	12	19	107	239	384
		% within province	1,8%	3,1%	4,9%	27,9%	62,2%	100%
	Sofala	Number	64	82	104	460	609	1319
		% within province	4,9%	6,2%	7,9%	34,9%	46,2%	100%
	Maputo City	Number	45	73	144	280	460	1002
		% within province	4,5%	7,3%	14,4%	27,9%	45,9%	100%
Total		Number	116	167	267	847	1308	2705
		% within province	4,3%	6,2%	9,9%	31,3%	48,4%	100%

Table F2.18: Chi-square Tests on Comparison of feelings revealed by students from the three provinces who participated in the study about administrators' relationships in dealing with them at their schools

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	77,852(a)	8	0,000
Likelihood Ratio	79,233	8	0,000
Linear-by-Linear Association	33,054	1	0,000
N of Valid Cases	2705		

a 0 cells (,0%) have expected count less than 5. The minimum expected count is 16,47.



Table F2.19: Comparison of feelings expressed by students from the three provinces who participated in the study about office staff relationships in dealing with them at their schools

			I am treated with respect by the office staff					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	10	19	41	114	200	384
		% within province	2,6%	4,9%	10,7%	29,7%	52,1%	100%
	Sofala	Number	125	135	180	435	444	1319
		% within province	9,5%	10,2%	13,6%	33,0%	33,7%	100%
	Maputo City	Number	114	133	207	291	257	1002
		% within province	11,4%	13,3%	20,7%	29,0%	25,6%	100%
Total		Number	249	287	428	840	901	2705
		% within province	9,2%	10,6%	15,8%	31,1%	33,3%	100%

Table F2.20: Chi-square Tests on comparison of feelings expressed by students from the three provinces who participated in the study about office staff relationships in dealing with them at their schools

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	128,528(a)	8	0,000
Likelihood Ratio	133,066	8	0,000
Linear-by-Linear Association	101,124	1	0,000
N of Valid Cases	2705		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 35,35.

Table F2.21: Comparison of feelings revealed by students from the three provinces who participated in the study about relationships among them at their schools

			Other students at this school treat me with respect				
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
province	Niassa	Number	27	34	49	104	170
		% within province	7,0%	8,9%	12,8%	27,1%	44,3%
	Sofala	Number	163	164	229	444	319
		% within province	12,4%	12,4%	17,4%	33,7%	24,2%
	Maputo City	Number	143	175	211	241	232
		% within province	14,3%	17,5%	21,1%	24,1%	23,2%
Total		Number	333	373	489	789	721
		% with province	12,3%	13,8%	18,1%	29,2%	26,7%



Table F2.22: Chi-square Tests on comparison of feelings revealed by students from the three provinces who participated in the study about relationships among them at their schools

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	112,517(a)	8	0,000
Likelihood Ratio	107,674	8	0,000
Linear-by-Linear Association	66,120	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 47,27.

Table F2.23: Comparison of opinions expressed by students to what extent teachers are seen from them as responsible for what they learn at their schools

			The people responsible for what I learn are my teachers					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	10	10	19	98	247	384
		% within province	2,6%	2,6%	4,9%	25,5%	64,3%	
	Sofala	Number	122	100	141	363	593	1319
		% within province	9,2%	7,6%	10,7%	27,5%	45,0%	
	Maputo City	Number	98	107	113	242	442	1002
		% within province	9,8%	10,7%	11,3%	24,2%	44,1%	
Total		Number	230	217	273	703	1282	2705
		% within province	8,5%	8,0%	10,1%	26,0%	47,4%	100,0%

Table F2.24: Chi-square tests on Comparison of opinions expressed by students to what extent teachers are seen from them as responsible for what they learn at their schools

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	83,291(a)	8	0,000
Likelihood Ratio	93,353	8	0,000
Linear-by-Linear Association	52,939	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 30,81.

Table F2.25: Comparison of feelings expressed by surveyed students from the three provinces about the level of challenge, which the work at their schools presents

			The work at this school is challenging					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	15	28	44	113	184	384
		% within province	3,9%	7,3%	11,5%	29,4%	47,9%	100,0%
	Sofala	Number	150	122	157	388	502	1319
		% within province	11,4%	9,2%	11,9%	29,4%	38,1%	100,0%
	Maputo City	Number	130	133	290	275	174	1002
		% within province	13,0%	13,3%	28,9%	27,4%	17,4%	100,0%
Total		Number	295	283	491	776	860	2705
		% within province	10,9%	10,5%	18,2%	28,7%	31,8%	100,0%

Table F2.26: Chi-square on Tests on comparison of feelings revealed by surveyed students from the three provinces about the level of challenge, which the work at their schools presents

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	250,833(a)	8	0,000
Likelihood Ratio	259,537	8	0,000
Linear-by-Linear Association	146,749	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 40,17.

Table F2.27: Comparison of feelings expressed by surveyed students from the three provinces about the level of challenge which the work at their schools presents by gender

			The work at this school is challenging					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	162	130	254	438	485	1469
		% within gender	11,0%	8,8%	17,3%	29,8%	33,0%	100,0%
	Female	Number	133	153	237	338	375	1236
		% within gender	10,8%	12,4%	19,2%	27,3%	30,3%	100,0%
Total		Number	295	283	491	776	860	2705
		% within gender	10,9%	10,5%	18,2%	28,7%	31,8%	100,0%

Table F2.28: Chi-square on Tests on comparison of feelings expressed by surveyed students from the three provinces about the level of challenge which the work at their schools presents by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,286(a)	4	0,015
Likelihood Ratio	12,252	4	0,016
Linear-by-Linear Association	4,513	1	0,034
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 129,31.

Table F2.29: Comparison of opinions expressed by surveyed students about school learning relevancy regarding real life

			I find what I learn in school relevant to real life					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	9	6	15	83	271	384
		% within province	2,3%	1,6%	3,9%	21,6%	70,6%	100%
	Sofala	Number	32	33	60	337	857	1319
		% within province	2,4%	2,5%	4,5%	25,5%	65,0%	100%
	Maputo City	Number	12	17	51	283	639	1002
		% within province	1,2%	1,7%	5,1%	28,2%	63,8%	100%
Total		Number	53	56	126	703	1767	2705
		% within province	2,0%	2,1%	4,7%	26,0%	65,3%	100%

Table F2.30: Chi-square Tests on comparison of opinions expressed by surveyed students about school learning relevancy regarding real life

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14,864(a)	8	0,062
Likelihood Ratio	15,337	8	0,053
Linear-by-Linear Association	0,165	1	0,685
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 7,52.



Table F2.31: Comparison of success feeling at school of surveyed students from the three provinces

			I feel successful at school					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	10	14	46	133	181	384
		% within province	2,6%	3,6%	12,0%	34,6%	47,1%	100,0%
	Sofala	Number	63	90	156	540	470	1319
		% within province	4,8%	6,8%	11,8%	40,9%	35,6%	100,0%
	Maputo City	Number	26	43	168	408	357	1002
		% within province	2,6%	4,3%	16,8%	40,7%	35,6%	100,0%
Total		Number	99	147	370	1081	1008	2705
		% within province	3,7%	5,4%	13,7%	40,0%	37,3%	100,0%

Table F2.32: Chi-Square Tests on comparison of success feeling at school of surveyed students from the three provinces

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	44,108(a)	8	0,000
Likelihood Ratio	43,419	8	0,000
Linear-by-Linear Association	2,993	1	0,084
N of Valid Cases	2705		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 14,05.

Table F2.33: Comparison of students' opinions of surveyed students from the three provinces expressing that the most responsible for what they learn were themselves

			The person most responsible for what I learn is myself					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	13	27	20	99	225	384
		% within province	3,4%	7,0%	5,2%	25,8%	58,6%	100,0%
	Sofala	Number	88	115	117	392	607	1319
		% within province	6,7%	8,7%	8,9%	29,7%	46,0%	100,0%
	Maputo City	Number	103	102	118	274	405	1002
		% within province	10,3%	10,2%	11,8%	27,3%	40,4%	100,0%
Total		Number	204	244	255	765	1237	2705
		% within province	7,5%	9,0%	9,4%	28,3%	45,7%	100,0%



Table F2.34: Comparison of students' opinions of surveyed students from the three provinces expressing that the most responsible for what they learn were themselves

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	59,162(a)	8	0,000
Likelihood Ratio	60,684	8	0,000
Linear-by-Linear Association	48,886	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 28,96.

Table F2.35: Comparison of opinions expressed by surveyed students from the three provinces revealing that they find their schools fun, enjoyable

			School is fun here					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	8	11	35	108	222	384
		% within province	2,1%	2,9%	9,1%	28,1%	57,8%	100%
	Sofala	Number	110	89	155	412	553	1319
		% within province	8,3%	6,7%	11,8%	31,2%	41,9%	100%
	Maputo City	Number	91	104	146	318	343	1002
		% within province	9,1%	10,4%	14,6%	31,7%	34,2%	100%
Total		Number	209	204	336	838	1118	2705
		% within province	7,7%	7,5%	12,4%	31,0%	41,3%	100%

Table F2.36: Chi-Square Tests on comparison of opinions expressed by surveyed students from the three provinces revealing that they find their schools fun, enjoyable

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	88,168(a)	8	0,000
Likelihood Ratio	95,098	8	0,000
Linear-by-Linear Association	70,964	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 28,96.

Table F2.37: Comparison of opinions expressed by surveyed students from the three provinces revealing that they find their schools fun, enjoyable by gender

			School is fun here					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	135	106	194	440	594	1469
		% within gender	9,2%	7,2%	13,2%	30,0%	40,4%	100%
	Female	Number	74	98	142	398	524	1236
		% within gender	6,0%	7,9%	11,5%	32,2%	42,4%	100%
Total	Number		209	204	336	838	1118	2705
	% within gender		7,7%	7,5%	12,4%	31,0%	41,3%	100%

Table F2.38: Chi-Square Tests on comparison of opinions expressed by surveyed students from the three provinces revealing that they find their schools fun, enjoyable by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,677(a)	4	0,013
Likelihood Ratio	12,856	4	0,012
Linear-by-Linear Association	6,185	1	0,013
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 93,21.

Table F2.39: Comparison of opinions expressed by surveyed students revealing that they like their schools

			I like this school					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	6	6	15	100	257	384
		% within province	1,6%	1,6%	3,9%	26,0%	66,9%	100%
	Sofala	Number	47	31	67	393	781	1319
		% within province	3,6%	2,4%	5,1%	29,8%	59,2%	100%
	Maputo City	Number	54	51	91	334	472	1002
		% within province	5,4%	5,1%	9,1%	33,3%	47,1%	100%
Total	Number		107	88	173	827	1510	2705
	% within province		4,0%	3,3%	6,4%	30,6%	55,8%	100%



Table 2.40: Chi-Square Tests on comparison of opinions expressed by surveyed students revealing that they like their schools

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	77,117(a)	8	0,000
Likelihood Ratio	77,739	8	0,000
Linear-by-Linear Association	65,328	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 12,49.

Table F2.41: Comparison of opinions of surveyed students from the three provinces expressing how good their schools are

			I think this is a good school					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	4	5	27	123	225	384
		% within province	1,0%	1,3%	7,0%	32,0%	58,6%	100,0%
	Sofala	Number	48	60	110	503	598	1319
		% within province	3,6%	4,5%	8,3%	38,1%	45,3%	100,0%
	Maputo City	Number	53	69	129	394	357	1002
		% within province	5,3%	6,9%	12,9%	39,3%	35,6%	100,0%
Total		Number	105	134	266	1020	1180	2705
		% within province	3,9%	5,0%	9,8%	37,7%	43,6%	100,0%

Table F2.42: Chi-square Tests on comparison of opinions of surveyed students from the three provinces expressing how good their schools are

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	86,436(a)	8	0,000
Likelihood Ratio	91,629	8	0,000
Linear-by-Linear Association	77,361	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 14,91.



Table F2.43: Comparison of opinions of surveyed students from the three provinces regarding the statement: “I like to learn”

			I like to learn					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	5	7	16	89	267	384
		% within province	1,3%	1,8%	4,2%	23,2%	69,5%	100%
	Sofala	Number	20	19	42	279	959	1319
		% within province	1,5%	1,4%	3,2%	21,2%	72,7%	100%
	Maputo City	Number	10	4	28	168	792	1002
		% within province	1,0%	,4%	2,8%	16,8%	79,0%	100%
Total		Number	35	30	86	536	2018	2705
		% within province	1,3%	1,1%	3,2%	19,8%	74,6%	100%

Table F2.44: Chi-Square Tests on comparison of opinions of surveyed students from the three provinces regarding the statement: “I like to learn”

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23,137(a)	8	0,003
Likelihood Ratio	24,285	8	0,002
Linear-by-Linear Association	15,781	1	0,000
N of Valid Cases	2705		

a 2 cells (13,3%) have expected count less than 5. The minimum expected count is 4,26.

Table F2.45: Comparison of opinions expressed by surveyed students from the three provinces revealing that doing well in school make them feel good about themselves

			Doing well in school makes me feel good about myself					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Count	17	16	36	127	188	384
		% within province	4,4%	4,2%	9,4%	33,1%	49,0%	100,0%
	Sofala	Count	53	62	134	533	537	1319
		% within province	4,0%	4,7%	10,2%	40,4%	40,7%	100,0%
	Maputo City	Count	21	32	106	330	513	1002
		% within province	2,1%	3,2%	10,6%	32,9%	51,2%	100,0%
Total		Count	91	110	276	990	1238	2705
		% within province	3,4%	4,1%	10,2%	36,6%	45,8%	100,0%



Table F2.46: Chi-Square Tests on comparison of opinions expressed by surveyed students from the three provinces revealing that doing well in school make them feel good about themselves

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	36,236(a)	8	0,000
Likelihood Ratio	36,890	8	0,000
Linear-by-Linear Association	8,703	1	0,003
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 12,92.

Table F2.47: Comparison of opinions of surveyed students from the three provinces revealing whether they are doing their best in school

		I am doing my best in school					Total	
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
province	Niassa	Count	14	18	71	113	168	384
		% within province	3,6%	4,7%	18,5%	29,4%	43,8%	100,0%
	Sofala	Count	55	75	150	474	565	1319
		% within province	4,2%	5,7%	11,4%	35,9%	42,8%	100,0%
	Maputo City	Count	19	43	98	311	531	1002
		% within province	1,9%	4,3%	9,8%	31,0%	53,0%	100,0%
Total		Count	88	136	319	898	1264	2705
		% within province	3,3%	5,0%	11,8%	33,2%	46,7%	100,0%

Table F2.48: Chi-Square Tests on comparison of opinions of surveyed students from the three provinces revealing whether they are doing their best in school

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	49,265(a)	8	0,000
Likelihood Ratio	47,849	8	0,000
Linear-by-Linear Association	23,969	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 12,49.



Table F2.49: Comparison of opinions expressed by surveyed students from the three provinces revealing the opportunities they have to learn from each other at their schools

			Students at this school have opportunities to learn from each other					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	14	30	24	119	197	384
		% within province	3,6%	7,8%	6,3%	31,0%	51,3%	100,0%
	Sofala	Number	95	119	155	487	463	1319
		% within province	7,2%	9,0%	11,8%	36,9%	35,1%	100,0%
	Maputo City	Number	70	58	127	366	381	1002
		% within province	7,0%	5,8%	12,7%	36,5%	38,0%	100,0%
Total		Number	179	207	306	972	1041	2705
		% within province	6,6%	7,7%	11,3%	35,9%	38,5%	100,0%

Table F2.50: Chi-Square Tests on comparison of opinions expressed by surveyed students from the three provinces revealing the opportunities they have to learn from each other at their schools

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	47,813(a)	8	0,000
Likelihood Ratio	49,355	8	0,000
Linear-by-Linear Association	5,055	1	0,025
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 25,41.



Table F2.51: Comparison of opinions expressed by surveyed students from the three provinces about opportunities for them to learn about each other at their schools

			Students at this school have opportunities to learn about each other					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	10	15	23	113	223	384
		% within province	2,6%	3,9%	6,0%	29,4%	58,1%	100,0%
	Sofala	Number	65	77	139	462	576	1319
		% within province	4,9%	5,8%	10,5%	35,0%	43,7%	100,0%
	Maputo City	Number	39	38	82	372	471	1002
		% within province	3,9%	3,8%	8,2%	37,1%	47,0%	100,0%
Total		Number	114	130	244	947	1270	2705
		% within province	4,2%	4,8%	9,0%	35,0%	47,0%	100,0%

Table F2.52: Chi- Square Tests on comparison of opinions expressed by surveyed students from the three provinces about opportunities for them to learn about each other at their schools

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	35,814(a)	8	0,000
Likelihood Ratio	36,049	8	0,000
Linear-by-Linear Association	1,212	1	0,271
N of Valid Cases	2705		

a 0 cells (,0%) have expected count less than 5. The minimum expected count is 16,18.



Table F2.53: Comparison of opinions of surveyed students from the three provinces about the importance of students' participation in extracurricular activities

			Participating in extracurricular activities is important to me					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	10	9	34	132	199	384
		% within province	2,6%	2,3%	8,9%	34,4%	51,8%	100,0%
	Sofala	Number	60	57	138	515	549	1319
		% within province	4,5%	4,3%	10,5%	39,0%	41,6%	100,0%
	Maputo City	Number	44	52	178	338	390	1002
		% within province	4,4%	5,2%	17,8%	33,7%	38,9%	100,0%
Total		Number	114	118	350	985	1138	2705
		% within province	4,2%	4,4%	12,9%	36,4%	42,1%	100,0%

Table F2.54: Chi-Square Tests on comparison of opinions of surveyed students from the three provinces about the importance of students' participation in extracurricular activities

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	53,216(a)	8	0,000
Likelihood Ratio	52,851	8	0,000
Linear-by-Linear Association	26,122	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 16,18.



Table F2.55: Comparison of opinions expressed by surveyed students regarding respect to colleagues who look different than they are

			Students at this school respect other students who are different than they are					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	19	20	49	132	164	384
		% within province	4,9%	5,2%	12,8%	34,4%	42,7%	100,0%
	Sofala	Number	146	166	221	418	368	1319
		% within province	11,1%	12,6%	16,8%	31,7%	27,9%	100,0%
	Maputo City	Number	217	163	256	199	167	1002
		% within province	21,7%	16,3%	25,5%	19,9%	16,7%	100,0%
Total		Number	382	349	526	749	699	2705
		% within province	14,1%	12,9%	19,4%	27,7%	25,8%	100,0%

Table F2.56: Chi-Square on comparison of opinions expressed by surveyed students regarding respect to colleagues who look different than they are

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	244,403(a)	8	0,000
Likelihood Ratio	250,684	8	0,000
Linear-by-Linear Association	213,099	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 49,54.



Table F2.57: Comparison of opinions of the surveyed students from the three provinces about teachers' attitude towards students' learning at school

			My teachers expect students to do their best					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Province	Niassa	Number	11	13	35	130	195	384
		% within province	2,9%	3,4%	9,1%	33,9%	50,8%	100%
	Sof ala	Number	65	60	124	500	570	1319
		% within province	4,9%	4,5%	9,4%	37,9%	43,2%	100%
	Maputo City	Number	23	31	132	283	533	1002
		% within province	2,3%	3,1%	13,2%	28,2%	53,2%	100%
Total		Number	99	104	291	913	1298	2705
		% within province	3,7%	3,8%	10,8%	33,8%	48,0%	100%

Table F2.58: Chi-square Tests on comparison of opinions of the surveyed students from the three provinces about teachers' attitude towards students' learning at school

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	51,898(a)	8	0,000
Likelihood Ratio	52,259	8	0,000
Linear-by-Linear Association	2,286	1	0,131
N of Valid Cases	2705		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 14,05.

Table F2.59: Comparison of opinions of the surveyed students from the three provinces about teachers' attitude towards individual student's learning at school

			My teachers expect me to do my best					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	12	21	41	136	174	384
		% within province	3,1%	5,5%	10,7%	35,4%	45,3%	100%
	Sof ala	Number	75	53	156	432	603	1319
		% within province	5,7%	4,0%	11,8%	32,8%	45,7%	100%
	Maputo City	Number	34	40	114	310	504	1002
		% within province	3,4%	4,0%	11,4%	30,9%	50,3%	100%
Total		Number	121	114	311	878	1281	2705
		% within province	4,5%	4,2%	11,5%	32,5%	47,4%	100%



Table F2.60: Chi-Square on comparison of opinions of the surveyed students from the three provinces about teachers' attitude towards individual student's learning at school

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15,249(a)	8	0,054
Likelihood Ratio	15,171	8	0,056
Linear-by-Linear Association	3,107	1	0,078
N of Valid Cases	2705		

a 0 cells (,0%) have expected count less than 5. The minimum expected count is 16,18.

Table F2.61: Comparison of opinions of the surveyed students from the three provinces about teachers understanding towards students having personal problems

			My teachers understand when students have personal problems					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	28	26	59	104	167	384
		% within province	7,3%	6,8%	15,4%	27,1%	43,5%	100%
	Sofala	Number	113	112	168	465	461	1319
		% within province	8,6%	8,5%	12,7%	35,3%	35,0%	100%
	Maputo City	Number	99	85	243	281	294	1002
		% within province	9,9%	8,5%	24,3%	28,0%	29,3%	100%
Total		Number	240	223	470	850	922	2705
		% within province	8,9%	8,2%	17,4%	31,4%	34,1%	100%

Table F2.62: Chi-Square Tests on comparison of opinions of the surveyed students from the three provinces about teachers understanding towards students having personal problems

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	77,010(a)	8	0,000
Likelihood Ratio	75,344	8	0,000
Linear-by-Linear Association	25,813	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 31,66.

Table F2.63: Comparison of opinions of the surveyed students from the three provinces about teachers’ effort in helping them to gain confidence in their ability to learn

			My teachers help me gain confidence in my ability to learn					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	5	13	30	120	216	384
		% within province	1,3%	3,4%	7,8%	31,3%	56,3%	100%
	Sofala	Number	68	83	133	491	544	1319
		% within province	5,2%	6,3%	10,1%	37,2%	41,2%	100%
	Maputo City	Number	36	48	162	366	390	1002
		% within province	3,6%	4,8%	16,2%	36,5%	38,9%	100%
Total		Number	109	144	325	977	1150	2705
		% within province	4,0%	5,3%	12,0%	36,1%	42,5%	100%

Table F2.64: Chi-Square Tests on comparison of opinions of the surveyed students from the three provinces about teachers’ effort in helping them to gain confidence in their ability to learn

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	65,003(a)	8	,000
Likelihood Ratio	65,787	8	,000
Linear-by-Linear Association	20,567	1	,000
N of Valid Cases	2705		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 15,47.

Table F2.65: Comparison of opinions of the surveyed students from the three provinces about teachers’ confidence in each student’s learning

			My teachers have confidence in me					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	22	17	38	141	166	384
		% within province	5,7%	4,4%	9,9%	36,7%	43,2%	100%
	Sofala	Number	90	120	212	475	422	1319
		% within province	6,8%	9,1%	16,1%	36,0%	32,0%	100%
	Maputo City	Number	72	96	250	336	248	1002
		% within province	7,2%	9,6%	25,0%	33,5%	24,8%	100%
Total		Number	184	233	500	952	836	2705
		% within province	6,8%	8,6%	18,5%	35,2%	30,9%	100%

Table F2.66: Chi-Square Tests on comparison of opinions of the surveyed students from the three provinces about teachers confidence in each student's learning

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	65,003(a)	8	0,000
Likelihood Ratio	65,787	8	0,000
Linear-by-Linear Association	20,567	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 15,47.

Table F2.67: Comparison of opinions of the surveyed students from the three provinces about teachers' knowledge of each student

			My teachers know me well					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	11	20	42	112	199	384
		% within province	2,9%	5,2%	10,9%	29,2%	51,8%	100%
	Sofala	Number	96	108	196	452	467	1319
		% within province	7,3%	8,2%	14,9%	34,3%	35,4%	100%
	Maputo City	Number	77	88	268	286	283	1002
		% within province	7,7%	8,8%	26,7%	28,5%	28,2%	100%
Total		Number	184	216	506	850	949	2705
		% within province	6,8%	8,0%	18,7%	31,4%	35,1%	100%

Table F2.68: Chi-square Tests on comparison of opinions of the surveyed students from the three provinces about teachers' knowledge of each student

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	123,099(a)	8	0,000
Likelihood Ratio	121,886	8	0,000
Linear-by-Linear Association	69,763	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 26,12.



Table F2.69: Comparison of opinions of surveyed students from the three provinces about teachers' reception of the ideas of each student

			My teachers listen to my ideas					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	21	27	58	118	160	384
		% within province	5,5%	7,0%	15,1%	30,7%	41,7%	100%
	Sofala	Number	85	116	166	469	483	1319
		% within province	6,4%	8,8%	12,6%	35,6%	36,6%	100%
	Maputo City	Number	67	86	218	335	296	1002
		% within province	6,7%	8,6%	21,8%	33,4%	29,5%	100%
Total		Number	173	229	442	922	939	2705
		% within province	6,4%	8,5%	16,3%	34,1%	34,7%	100%

Table F2.70: Chi-square Tests on comparison of opinions of surveyed students from the three provinces about teachers' reception of the ideas of each student

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	48,184(a)	8	0,000
Likelihood Ratio	47,648	8	0,000
Linear-by-Linear Association	16,723	1	0,000
N of Valid Cases	2705		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 24,56.

Table F2.71: Comparison of opinions of surveyed students from the three provinces concerning teachers caring about each student

			My teachers care about me					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	15	13	59	118	179	384
		% within province	3,9%	3,4%	15,4%	30,7%	46,6%	100,0%
	Sofala	Number	101	121	247	449	401	1319
		% within province	7,7%	9,2%	18,7%	34,0%	30,4%	100,0%
	Maputo City	Number	106	138	287	268	203	1002
		% within province	10,6%	13,8%	28,6%	26,7%	20,3%	100,0%
Total		Number	222	272	593	835	783	2705
		% within province	8,2%	10,1%	21,9%	30,9%	28,9%	100,0%



Table F2.72: Chi-square Tests on Comparison of opinions of surveyed students from the three provinces concerning teachers caring about each student

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	160,423 ^a	8	,000
Likelihood Ratio	162,531	8	,000
Linear-by-Linear Association	129,992	1	,000
N of Valid Cases	2705		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 31,51.

Table F2.73: Comparison of opinions of surveyed students from the three provinces expressing whether their teachers make learning activities fun, enjoyable

			My teachers make learning fun					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	4	15	34	116	215	384
		% within province	1,0%	3,9%	8,9%	30,2%	56,0%	100%
	Sofala	Number	74	85	167	465	528	1319
		% within province	5,6%	6,4%	12,7%	35,3%	40,0%	100%
	Maputo City	Number	55	55	191	375	326	1002
		% within province	5,5%	5,5%	19,1%	37,4%	32,5%	100%
Total		Number	133	155	392	956	1069	2705
		% within province	4,9%	5,7%	14,5%	35,3%	39,5%	100%

Table F2.74: Chi-Square Tests on comparison of opinions of surveyed students from the three provinces expressing whether their teachers make learning activities fun, enjoyable

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	86,014(a)	8	0,000
Likelihood Ratio	89,861	8	0,000
Linear-by-Linear Association	48,920	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 18,88.

Table F2.75: Comparison by gender of opinions of surveyed students from the three provinces expressing whether their teachers make learning activities fun, enjoyable

			My teachers make learning fun					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	91	86	216	499	577	1469
		% within gender	6,2%	5,9%	14,7%	34,0%	39,3%	100,0%
	Female	Number	42	69	176	457	492	1236
		% within gender	3,4%	5,6%	14,2%	37,0%	39,8%	100,0%
Total		Number	133	155	392	956	1069	2705
		% within gender	4,9%	5,7%	14,5%	35,3%	39,5%	100,0%

Table F2.76: Chi- Square Tests on comparison by gender of opinions of surveyed students from the three provinces expressing whether their teachers make learning activities fun, enjoyable

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,626(a)	4	0,013
Likelihood Ratio	12,959	4	0,011
Linear-by-Linear Association	5,455	1	0,020
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 60,77.

Table F2.77: Comparison of opinions of surveyed students from the three provinces concerning teachers' excitement about the subjects they teach

			My teachers are excited about the subjects they teach					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	8	7	17	114	238	384
		% within province	2,1%	1,8%	4,4%	29,7%	62,0%	100%
	Sofala	Number	40	36	83	405	755	1319
		% within province	3,0%	2,7%	6,3%	30,7%	57,2%	100%
	Maputo City	Number	24	27	128	312	511	1002
		% within province	2,4%	2,7%	12,8%	31,1%	51,0%	100%
Total		Number	72	70	228	831	1504	2705
		% within province	2,7%	2,6%	8,4%	30,7%	55,6%	100%



Table F2.78: Chi-Square on comparison of opinions of surveyed students from the three provinces concerning teachers' excitement about the subjects they teach

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	46,788(a)	8	0,000
Likelihood Ratio	46,053	8	0,000
Linear-by-Linear Association	17,165	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 9,94.

Table F2.79: Comparison of opinions of surveyed students from the three provinces on teachers paying individual attention to them when needed.

			My teachers give me individual attention when I need it					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
provincia	Niassa	Count	29	29	31	125	170	384
		% within provincia	7,6%	7,6%	8,1%	32,6%	44,3%	100%
	Sofala	Count	109	96	109	516	489	1319
		% within provincia	8,3%	7,3%	8,3%	39,1%	37,1%	100%
	Maputo City	Count	87	108	178	386	243	1002
		% within provincia	8,7%	10,8%	17,8%	38,5%	24,3%	100%
Total		Count	225	233	318	1027	902	2705
		% within provincia	8,3%	8,6%	11,8%	38,0%	33,3%	100%

Table F2.80: Chi-Square Tests on comparison of opinions of surveyed students from the three provinces about teachers paying individual attention to them when needed

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	105,608(a)	8	0,000
Likelihood Ratio	104,613	8	0,000
Linear-by-Linear Association	41,547	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 31,94.



Table F2.81: Comparison of surveyed students' opinions about learning towards the real world in the context of the new curriculum concerning ability to write

			The new curriculum will contribute to my education in reference to my ability to write					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	5	10	14	114	241	384
		% within province	1,3%	2,6%	3,6%	29,7%	62,8%	100%
	Sofala	Number	23	28	54	456	758	1319
		% within province	1,7%	2,1%	4,1%	34,6%	57,5%	100%
	Maputo City	Number	25	19	77	296	585	1002
		% within province	2,5%	1,9%	7,7%	29,5%	58,4%	100%
Total		Number	53	57	145	866	1584	2705
		% within province	2,0%	2,1%	5,4%	32,0%	58,6%	100%

Table F2.82: Chi-Square Tests on comparison of surveyed students' opinions about learning towards the real world in the context of the new curriculum concerning ability to write

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26,130(a)	8	0,001
Likelihood Ratio	25,504	8	0,001
Linear-by-Linear Association	4,520	1	0,034
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 7,52.

Table F2.83: Comparison of surveyed students' opinions about learning towards the real world in the context of the new curriculum concerning the ability to read

			The new curriculum will contribute to my education in reference to my ability to read					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	2	11	15	106	250	384
		% within province	,5%	2,9%	3,9%	27,6%	65,1%	100%
	Sofala	Number	19	21	49	399	831	1319
		% within province	1,4%	1,6%	3,7%	30,3%	63,0%	100%
	Maputo City	Number	26	19	65	288	604	1002
		% within province	2,6%	1,9%	6,5%	28,7%	60,3%	100%
Total		Number	47	51	129	793	1685	2705
		% within province	1,7%	1,9%	4,8%	29,3%	62,3%	100%



Table F2.84: Chi-Square Tests on comparison of surveyed students' opinions about learning towards the real world in the context of the new curriculum concerning the ability to read

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22,744(a)	8	0,004
Likelihood Ratio	22,903	8	0,003
Linear-by-Linear Association	8,493	1	0,004
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 6,67.

Table F2.85: Chi-Square Tests on comparison by gender of surveyed students' opinions about learning towards the real world in the context of the new curriculum concerning the ability to read

			The new curriculum will contribute to my education in reference to my ability to read					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	35	25	75	428	906	1469
		% within gender	2,4%	1,7%	5,1%	29,1%	61,7%	100%
	Female	Number	12	26	54	365	779	1236
		% within gender	1,0%	2,1%	4,4%	29,5%	63,0%	100%
Total		Number	47	51	129	793	1685	2705
		% within gender	1,7%	1,9%	4,8%	29,3%	62,3%	100%

Table F2.86: Chi-Square Tests on comparison by gender of surveyed students' opinions about learning towards the real world in the context of the new curriculum concerning the ability to read

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9,270(a)	4	0,055
Likelihood Ratio	9,704	4	0,046
Linear-by-Linear Association	3,066	1	0,080
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 21,48.

Table F2.87: Comparison of surveyed students' opinions about learning in the context of the new curriculum concerning the ability to deal with mathematical problems

			The new curriculum will contribute to my education in reference to my ability with Mathematics					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	4	7	26	111	236	384
		% within province	1,0%	1,8%	6,8%	28,9%	61,5%	100%
	Sofala	Number	34	30	81	497	677	1319
		% within province	2,6%	2,3%	6,1%	37,7%	51,3%	100%
	Maputo City	Number	25	21	100	301	555	1002
		% within province	2,5%	2,1%	10,0%	30,0%	55,4%	100%
Total		Number	63	58	207	909	1468	2705
		% within province	2,3%	2,1%	7,7%	33,6%	54,3%	100%

Table F2.88: Chi-Square Tests on comparison of surveyed students' opinions about learning in the context of the new curriculum concerning the ability to deal with mathematical problems

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33,746(a)	8	0,000
Likelihood Ratio	34,040	8	0,000
Linear-by-Linear Association	4,219	1	0,040
N of Valid Cases	2705		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 8,23.

Table F2.89: Comparison of surveyed students' opinions for the real world about learning in the context of the new curriculum concerning the ability to present information

			The new curriculum will contribute to my education in reference to my ability to present information					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	5	13	14	126	226	384
		% within province	1,3%	3,4%	3,6%	32,8%	58,9%	100%
	Sofala	Number	34	47	123	500	615	1319
		% within province	2,6%	3,6%	9,3%	37,9%	46,6%	100%
	Maputo City	Number	39	39	180	366	378	1002
		% within province	3,9%	3,9%	18,0%	36,5%	37,7%	100%
Total		Number	78	99	317	992	1219	2705
		% within province	2,9%	3,7%	11,7%	36,7%	45,1%	100%



Table F2.90: Chi-Square Tests on comparison of surveyed students' opinions for the real world about learning in the context of the new curriculum concerning the ability to present information

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	99,717(a)	8	0,000
Likelihood Ratio	103,282	8	0,000
Linear-by-Linear Association	64,540	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 11,07.

Table F2.91: Comparison of surveyed students' opinions for the real world about learning in the context of the new curriculum concerning the ability to cope with technology

			The new curriculum will contribute to my education in reference to my ability to cope with technology					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	9	15	44	99	217	384
		% within province	2,3%	3,9%	11,5%	25,8%	56,5%	100,0%
	Sofala	Number	59	59	131	415	655	1319
		% within province	4,5%	4,5%	9,9%	31,5%	49,7%	100,0%
	Maputo City	Number	82	85	268	297	270	1002
		% within province	8,2%	8,5%	26,7%	29,6%	26,9%	100,0%
Total		Number	150	159	443	811	1142	2705
		% within province	5,5%	5,9%	16,4%	30,0%	42,2%	100,0%

Table F2.92: Chi-Square Tests on comparison of surveyed students' opinions for the real world about learning in the context of the new curriculum concerning the ability to cope with technology

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	240,362(a)	8	0,000
Likelihood Ratio	241,386	8	0,000
Linear-by-Linear Association	160,936	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 21,29.

Table F2.93: Comparison of surveyed students' opinions for the real world about learning in the context of the new curriculum concerning the ability to cope with technology by gender

			The new curriculum will contribute to my education in reference to my ability to cope with technology					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	90	72	218	447	642	1469
		% within gender	6,1%	4,9%	14,8%	30,4%	43,7%	100,0%
	Female	Number	60	87	225	364	500	1236
		% within gender	4,9%	7,0%	18,2%	29,4%	40,5%	100,0%
Total		Number	150	159	443	811	1142	2705
		% within gender	5,5%	5,9%	16,4%	30,0%	42,2%	100,0%

Table F2.94: Chi-Square Tests on comparison of surveyed students' opinions for the real world about learning in the context of the new curriculum concerning ability to cope with technology by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13,709(a)	4	0,008
Likelihood Ratio	13,686	4	0,008
Linear-by-Linear Association	2,543	1	0,111
N of Valid Cases	2705		

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 68,54.

Table F2.95: Comparison of surveyed students' opinions about time use in teaching of the new curriculum listening to the teacher talk

			In the teaching of the new curriculum, time is spent listening to the teacher talk					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	50	35	27	67	205	384
		% within province	13,0%	9,1%	7,0%	17,4%	53,4%	100%
	Sofala	Number	256	187	169	336	371	1319
		% within province	19,4%	14,2%	12,8%	25,5%	28,1%	100%
	Maputo City	Number	255	153	197	191	206	1002
		% within province	25,4%	15,3%	19,7%	19,1%	20,6%	100%
Total		Number	561	375	393	594	782	2705
		% within province	20,7%	13,9%	14,5%	22,0%	28,9%	100%



Table F2.96: Chi-Square Tests on comparison of surveyed students' opinions about time use in teaching of the new curriculum listening to the teacher talk

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	185,169(a)	8	0,000
Likelihood Ratio	175,558	8	0,000
Linear-by-Linear Association	107,505	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 53,23

Table F2.97: Comparison of surveyed students' opinions about time use in teaching of the new curriculum listening to the teacher talk by gender

			In the teaching of the new curriculum, time is spent listening to the teacher talk					
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
gender	Male	Number	322	211	225	329	382	1469
		% within gender	21,9%	14,4%	15,3%	22,4%	26,0%	100,0%
	Female	Number	239	164	168	265	400	1236
		% within gender	19,3%	13,3%	13,6%	21,4%	32,4%	100,0%
Total		Number	561	375	393	594	782	2705
		% within gender	20,7%	13,9%	14,5%	22,0%	28,9%	100,0%

Table F2.98: Chi-Square Tests on comparison of surveyed students' opinions about time use in teaching of the new curriculum listening to the teacher talk by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13,780(a)	4	0,008
Likelihood Ratio	13,756	4	0,008
Linear-by-Linear Association	9,539	1	0,002
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 171,35.



Table F2.99: Comparison of surveyed students' opinions about time use in the teaching of the new curriculum in whole-class discussions with the teacher

			In the teaching of the new curriculum, time is spent in whole-class discussion with the teacher					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	41	47	42	88	166	384
		% within province	10,7%	12,2%	10,9%	22,9%	43,2%	100,0%
	Sofala	Number	191	182	229	395	322	1319
		% within province	14,5%	13,8%	17,4%	29,9%	24,4%	100,0%
	Maputo City	Number	225	152	241	205	179	1002
		% within province	22,5%	15,2%	24,1%	20,5%	17,9%	100,0%
Total		Number	457	381	512	688	667	2705
		% within province	16,9%	14,1%	18,9%	25,4%	24,7%	100,0%

Table F2.100: Chi-square Tests on Comparison of surveyed students' opinions about time use in the teaching of the new curriculum in whole-class discussions with the teacher

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	155,843(a)	8	0,000
Likelihood Ratio	149,213	8	0,000
Linear-by-Linear Association	99,561	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 54,09.

Table F2.101: Comparison of surveyed students' opinions about time use in the teaching of the new curriculum working in small groups

			In the teaching of the new curriculum time is spent working in small groups					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	33	27	46	95	183	384
		% within province	8,6%	7,0%	12,0%	24,7%	47,7%	100%
	Sofala	Number	106	76	129	495	513	1319
		% within province	8,0%	5,8%	9,8%	37,5%	38,9%	100%
	Maputo City	Number	130	115	157	278	322	1002
		% within province	13,0%	11,5%	15,7%	27,7%	32,1%	100%
Total		Number	269	218	332	868	1018	2705
		% within province	9,9%	8,1%	12,3%	32,1%	37,6%	100%

Table F2.102: Chi-square Tests on Comparison of surveyed students' opinions about time use in the teaching of the new curriculum working in small groups

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	97,938(a)	8	0,000
Likelihood Ratio	96,340	8	0,000
Linear-by-Linear Association	46,619	1	0,000
N of Valid Cases	2705		

a 0 cells (,0%) have expected count less than 5. The minimum expected count is 30,95.

Table F2.103: Comparison of surveyed students' opinions about time use for reading in the teaching of the new curriculum

			In the teaching of the new curriculum, time is spent reading					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	40	48	33	89	174	384
		% within province	10,4%	12,5%	8,6%	23,2%	45,3%	100,0%
	Sofala	Number	150	129	163	388	489	1319
		% within province	11,4%	9,8%	12,4%	29,4%	37,1%	100,0%
	Maputo City	Number	149	129	148	252	324	1002
		% within province	14,9%	12,9%	14,8%	25,1%	32,3%	100,0%
Total		Number	339	306	344	729	987	2705
		% within province	12,5%	11,3%	12,7%	27,0%	36,5%	100,0%

Table F2.104: Chi-square Tests on Comparison of surveyed students' opinions about time use in the teaching of the new curriculum reading

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	40,390(a)	8	0,000
Likelihood Ratio	40,440	8	0,000
Linear-by-Linear Association	21,661	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 43,44.

Table F2.105: Comparison of surveyed students' opinions about time use for reading in the teaching of the new curriculum by gender

			In the teaching of the new curriculum, time is spent reading					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	189	164	183	435	498	1469
		% within gender	12,9%	11,2%	12,5%	29,6%	33,9%	100%
	Female	Number	150	142	161	294	489	1236
		% within gender	12,1%	11,5%	13,0%	23,8%	39,6%	100%
Total		Number	339	306	344	729	987	2705
		% within gender	12,5%	11,3%	12,7%	27,0%	36,5%	100%

Table F2.106: Chi-square Tests on Comparison of surveyed students' opinions about time use for reading in the teaching of the new curriculum by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14,870(a)	4	0,005
Likelihood Ratio	14,919	4	0,005
Linear-by-Linear Association	1,523	1	0,217
N of Valid Cases	2705		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 139,82.

Table F2.107: Comparison of surveyed students' opinions about time use in the teaching of the new curriculum answering questions from a book for worksheet

			In the teaching of the new curriculum, time is spent answering questions from a book or worksheet					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	30	37	24	81	212	384
		% within province	7,8%	9,6%	6,3%	21,1%	55,2%	100,0%
	Sofala	Number	108	129	133	448	501	1319
		% within province	8,2%	9,8%	10,1%	34,0%	38,0%	100,0%
	Maputo City	Number	120	92	98	257	435	1002
		% within province	12,0%	9,2%	9,8%	25,6%	43,4%	100,0%
Total		Number	258	258	255	786	1148	2705
		% within province	9,5%	9,5%	9,4%	29,1%	42,4%	100,0%

Table F2.108: Chi-square Tests on Comparison of surveyed students' opinions about time use in the teaching of the new curriculum answering questions from a book for worksheet

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	59,498(a)	8	0,000
Likelihood Ratio	59,204	8	0,000
Linear-by-Linear Association	9,100	1	0,003
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 36,20.

Table F2.109: Comparison of surveyed students' opinions about time use in the teaching of the new curriculum analyzing individual or class performance

			In the teaching of the new curriculum, time is spent analyzing individual or class performance					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	50	43	34	105	152	384
		% within province	13,0%	11,2%	8,9%	27,3%	39,6%	100%
	Sofala	Number	122	132	209	464	392	1319
		% within province	9,2%	10,0%	15,8%	35,2%	29,7%	100%
	Maputo City	Number	113	134	222	303	230	1002
		% within province	11,3%	13,4%	22,2%	30,2%	23,0%	100%
Total		Number	285	309	465	872	774	2705
		% within province	10,5%	11,4%	17,2%	32,2%	28,6%	100%

Table F2.110: Chi-square Tests on Comparison of surveyed students' opinions about time use in the teaching of the new curriculum analyzing individual or class performance

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	77,355(a)	8	0,000
Likelihood Ratio	78,564	8	0,000
Linear-by-Linear Association	22,135	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 40,46.

Table F2.111: Comparison of surveyed students' opinions about time use in the teaching of the new curriculum analyzing individual or class performance by gender

			In the teaching of the new curriculum, time is spent analyzing individual or class performance					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	171	165	277	463	393	1469
		% within gender	11,6%	11,2%	18,9%	31,5%	26,8%	100%
	Female	Number	114	144	188	409	381	1236
		% within gender	9,2%	11,7%	15,2%	33,1%	30,8%	100%
Total		Number	285	309	465	872	774	2705
		% within gender	10,5%	11,4%	17,2%	32,2%	28,6%	100%

Table F2.112: Chi-square Tests on Comparison of surveyed students' opinions about time use in the teaching of the new curriculum analyzing individual or class performance by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13,421(a)	4	0,009
Likelihood Ratio	13,483	4	0,009
Linear-by-Linear Association	7,987	1	0,005
N of Valid Cases	2705		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 130,23.

Table F2.113: Comparison of surveyed students' opinions about their effective learning method, namely, working on projects or research

			I work well in the new curriculum when I am working in projects or research					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	33	30	61	102	158	384
		% within province	8,6%	7,8%	15,9%	26,6%	41,1%	100%
	Sofala	Number	107	96	166	503	447	1319
		% within province	8,1%	7,3%	12,6%	38,1%	33,9%	100%
	Maputo City	Number	95	90	254	323	240	1002
		% within province	9,5%	9,0%	25,3%	32,2%	24,0%	100%
Total		Number	235	216	481	928	845	2705
		% within province	8,7%	8,0%	17,8%	34,3%	31,2%	100%

Table F2.114: Chi-Square Tests on Comparison of surveyed students' opinions about their effective learning method, namely, working on projects or research

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	102,059(a)	8	0,000
Likelihood Ratio	101,273	8	0,000
Linear-by-Linear Association	30,737	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 30,66.

Table F2.115: Chi-Square Tests on Comparison of the surveyed students' opinions about their effective learning method, namely, discussion with whole class led by the teacher

			I work well in the new curriculum when the teachers are leading discussions with the whole class					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	24	24	40	103	193	384
		% within province	6,3%	6,3%	10,4%	26,8%	50,3%	100,0%
	Sofala	Number	72	99	153	539	456	1319
		% within province	5,5%	7,5%	11,6%	40,9%	34,6%	100,0%
	Maputo City	Number	86	91	195	354	276	1002
		% within province	8,6%	9,1%	19,5%	35,3%	27,5%	100,0%
Total		Number	182	214	388	996	925	2705
		% within province	6,7%	7,9%	14,3%	36,8%	34,2%	100,0%

Table F2.116: Chi-Square Tests on Comparison of surveyed students' opinions about their effective learning method, namely, discussion with whole class led by the teacher

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	99,990(a)	8	0,000
Likelihood Ratio	97,035	8	0,000
Linear-by-Linear Association	49,624	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 25,84.



Table F2.117: Comparison of surveyed students' opinions about their effective learning method, namely, working in small group

			I work well in the new curriculum when I am working in small group					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	12	37	40	122	173	384
		% within province	3,1%	9,6%	10,4%	31,8%	45,1%	100%
	Sofala	Number	72	108	160	474	505	1319
		% within province	5,5%	8,2%	12,1%	35,9%	38,3%	100%
	Maputo City	Number	69	67	210	366	290	1002
		% within province	6,9%	6,7%	21,0%	36,5%	28,9%	100%
Total		Number	153	212	410	962	968	2705
		% within province	5,7%	7,8%	15,2%	35,6%	35,8%	100%

Table F2.118: Chi-Square Tests on Comparison of surveyed students' opinions about their effective learning method, namely, working in small group

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	73,015(a)	8	0,000
Likelihood Ratio	72,798	8	0,000
Linear-by-Linear Association	26,815	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 21,72.

Table F2.119: Comparison of the surveyed students' opinions about their effective learning method, namely, individual work

			I work well in the new curriculum when I am working by myself					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	25	28	25	92	214	384
		% within province	6,5%	7,3%	6,5%	24,0%	55,7%	100,0%
	Sofala	Number	116	104	126	424	549	1319
		% within province	8,8%	7,9%	9,6%	32,1%	41,6%	100,0%
	Maputo City	Number	79	76	182	303	362	1002
		% within province	7,9%	7,6%	18,2%	30,2%	36,1%	100,0%
Total		Number	220	208	333	819	1125	2705
		% within province	8,1%	7,7%	12,3%	30,3%	41,6%	100,0%



Table F2.120: Chi-Square Tests on Comparison of the surveyed students' opinions about their fruitful working style, namely, individual work

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	80,948(a)	8	0,000
Likelihood Ratio	79,217	8	0,000
Linear-by-Linear Association	20,928	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 29,53.

Table F2.121: Comparison by gender of the surveyed students' opinions about their fruitful working style, namely, individual work

			I work well in the new curriculum when I am working by myself					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	138	121	192	433	585	1469
		% within gender	9,4%	8,2%	13,1%	29,5%	39,8%	100,0%
	Female	Number	82	87	141	386	540	1236
		% within gender	6,6%	7,0%	11,4%	31,2%	43,7%	100,0%
Total		Number	220	208	333	819	1125	2705
		% within gender	8,1%	7,7%	12,3%	30,3%	41,6%	100,0%

Table F2.122: Chi-Square Tests on Comparison of the surveyed students' opinions about their effective learning method, namely, working individually by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,140(a)	4	0,016
Likelihood Ratio	12,241	4	0,016
Linear-by-Linear Association	11,240	1	0,001
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 95,04.

Table F2.123: Comparison of opinions of the surveyed students about the level of importance of the Portuguese subject, which they are taught in the context of the new curriculum

			I think that the important subject is Portuguese					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	3	5	9	88	279	384
		% within province	,8%	1,3%	2,3%	22,9%	72,7%	100%
	Sofala	Number	21	14	33	273	978	1319
		% within province	1,6%	1,1%	2,5%	20,7%	74,1%	100%
	Maputo City	Number	21	5	26	174	776	1002
		% within province	2,1%	,5%	2,6%	17,4%	77,4%	100%
Total		Number	45	24	68	535	2033	2705
		% within province	1,7%	,9%	2,5%	19,8%	75,2%	100%

Table F2.124: Chi-square Tests on Comparison of opinions of the surveyed students about the level of importance of the Portuguese subject, which they are taught in the context of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,554(a)	8	0,128
Likelihood Ratio	13,137	8	0,107
Linear-by-Linear Association	,542	1	0,462
N of Valid Cases	2705		

a. 1 cells (6,7%) have expected count less than 5. The minimum expected count is 3,41.

Table F2. 125: Comparison of opinions of the surveyed students about the level of importance of the Local Language subject, which they are taught in the context of the new curriculum

			I think that the important subject is the Local Language					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	42	31	87	82	142	384
		% within province	10,9%	8,1%	22,7%	21,4%	37,0%	100%
	Sofala	Number	62	62	743	184	268	1319
		% within province	4,7%	4,7%	56,3%	13,9%	20,3%	100%
	Maputo City	Number	100	65	244	249	344	1002
		% within province	10,0%	6,5%	24,4%	24,9%	34,3%	100%
Total		Number	204	158	1074	515	754	2705
		% within province	7,5%	5,8%	39,7%	19,0%	27,9%	100%



Table F2.126: Chi-square Tests on Comparison of opinions of the surveyed students about the level of importance of the Local Language subject, which they are taught in the context of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	304,465(a)	8	0,000
Likelihood Ratio	310,167	8	0,000
Linear-by-Linear Association	4,535	1	0,033
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 22,43.

Table F2.127: Comparison of opinions of the surveyed students about the level of importance of the Local Language subject, which they are taught in the context of the new curriculum by gender

			I think that the important subject is the Local Language					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	117	97	608	260	387	1469
		% within gender	8,0%	6,6%	41,4%	17,7%	26,3%	100%
	Female	Number	87	61	466	255	367	1236
		% within gender	7,0%	4,9%	37,7%	20,6%	29,7%	100%
Total		Number	204	158	1074	515	754	2705
		% within gender	7,5%	5,8%	39,7%	19,0%	27,9%	100%

Table F2.128: Chi-square Tests on Comparison of opinions of the surveyed students about the level of importance of the Local Language subject, which they are taught in the context of the new curriculum by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11,987(a)	4	0,017
Likelihood Ratio	12,017	4	0,017
Linear-by-Linear Association	8,433	1	0,004
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 72,20.



Table F2.129: Comparison of opinions of the surveyed students about the level of importance of the English subject, which they are taught in the context of the new curriculum

			I think that the important subject is English					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	21	34	52	100	177	384
		% within province	5,5%	8,9%	13,5%	26,0%	46,1%	100,0%
	Sofala	Number	39	63	198	462	557	1319
		% within province	3,0%	4,8%	15,0%	35,0%	42,2%	100,0%
	Maputo City	Number	31	46	134	336	455	1002
		% within province	3,1%	4,6%	13,4%	33,5%	45,4%	100,0%
Total		Number	91	143	384	898	1189	2705
		% within province	3,4%	5,3%	14,2%	33,2%	44,0%	100,0%

Table F2.130: Chi-square Tests on Comparison of opinions of the surveyed students about the level of importance of the English subject, which they are taught in the context of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27,009(a)	8	0,001
Likelihood Ratio	25,176	8	0,001
Linear-by-Linear Association	5,436	1	0,020
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 12,92.

Table 1.131: Comparison of opinions of the surveyed students about the level of importance of the English subject, which they are taught in the context of the new curriculum by gender

			I think that the important subject is English					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	48	69	191	465	696	1469
		% within gender	3,3%	4,7%	13,0%	31,7%	47,4%	100,0%
	Female	Number	43	74	193	433	493	1236
		% within gender	3,5%	6,0%	15,6%	35,0%	39,9%	100,0%
Total		Number	91	143	384	898	1189	2705
		% within gender	3,4%	5,3%	14,2%	33,2%	44,0%	100,0%



Table F2.132: Chi-square Tests on Comparison of opinions of the surveyed students about the level of importance of the English subject, which is taught them in the context of the new curriculum by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16,310(a)	4	0,003
Likelihood Ratio	16,335	4	0,003
Linear-by-Linear Association	10,946	1	0,001
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 41,58.

Table F2.133: Comparison of opinions of the surveyed students about the level of importance of the Social Sciences subject, which they are taught in the context of the new curriculum

			I think that the important subject is: Social Sciences					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	12	23	39	128	182	384
		% within province	3,1%	6,0%	10,2%	33,3%	47,4%	100%
	Sofala	Number	35	67	220	473	524	1319
		% within province	2,7%	5,1%	16,7%	35,9%	39,7%	100%
	Maputo City	Number	33	37	161	384	387	1002
		% within province	3,3%	3,7%	16,1%	38,3%	38,6%	100%
Total		Number	80	127	420	985	1093	2705
		% within province	3,0%	4,7%	15,5%	36,4%	40,4%	100%

Table F2.134: Chi-square Tests on Comparison of opinions of the surveyed students about the level of importance of the Social Sciences subject, which they are taught in the context of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20,909(a)	8	0,007
Likelihood Ratio	21,712	8	0,005
Linear-by-Linear Association	1,903	1	0,168
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 11,36.



Table F2.135: Comparison of opinions of the surveyed students about the level of importance of the Moral and Civic Education subject, which they are taught in the context of the new curriculum

			I think that the important subject is Moral and Civic Education					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	15	18	37	111	203	384
		% within province	3,9%	4,7%	9,6%	28,9%	52,9%	100%
	Sofala	Number	40	55	184	442	598	1319
		% within province	3,0%	4,2%	13,9%	33,5%	45,3%	100%
	Maputo City	Number	21	29	142	331	479	1002
		% within province	2,1%	2,9%	14,2%	33,0%	47,8%	100%
Total		Number	76	102	363	884	1280	2705
		% within province	2,8%	3,8%	13,4%	32,7%	47,3%	100%

Table F2.136: Chi-square Tests on Comparison of opinions of the surveyed students about the level of importance of the Moral and Civic Education subject, which they are taught them in the context of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17,575(a)	8	0,025
Likelihood Ratio	18,094	8	0,021
Linear-by-Linear Association	,335	1	0,563
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 10,79.

Table F2.137 Comparison of opinions of the surveyed students about the level of importance of the Mathematics subject, which they are taught in the context of the new curriculum

			I think that the important subject is Mathematics					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	6	6	15	98	259	384
		% within province	1,6%	1,6%	3,9%	25,5%	67,4%	100%
	Sofala	Number	19	20	66	273	941	1319
		% within province	1,4%	1,5%	5,0%	20,7%	71,3%	100%
	Maputo City	Number	17	9	47	192	737	1002
		% within province	1,7%	,9%	4,7%	19,2%	73,6%	100%
Total		Number	42	35	128	563	1937	2705
		% within province	1,6%	1,3%	4,7%	20,8%	71,6%	100%



Table F2.138: Chi-square Tests on Comparison of opinions of surveyed students about the level of importance of the Mathematics subject, which is taught them in the context of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9,815(a)	8	0,278
Likelihood Ratio	9,725	8	0,285
Linear-by-Linear Association	1,985	1	0,159
N of Valid Cases	2705		

a 1 cells (6,7%) have expected count less than 5. The minimum expected count is 4,97.

Table F2.139: Comparison of opinions of the surveyed students about the level of importance of the Mathematics subject, which they are taught in the context of the new curriculum by gender

			I think that the important subject is Mathematics					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	26	17	72	272	1082	1469
		% within gender	1,8%	1,2%	4,9%	18,5%	73,7%	100%
	Female	Number	16	18	56	291	855	1236
		% within gender	1,3%	1,5%	4,5%	23,5%	69,2%	100%
Total		Number	42	35	128	563	1937	2705
		% within gender	1,6%	1,3%	4,7%	20,8%	71,6%	100%

Table F2.140: Chi-square Tests on Comparison of opinions of the surveyed students about the level of importance of the Mathematics subject, which they are taught the context of the new curriculum by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11,670(a)	4	0,020
Likelihood Ratio	11,648	4	0,020
Linear-by-Linear Association	1,206	1	0,272
N of Valid Cases	2705		

a 0 cells (,0%) have expected count less than 5. The minimum expected count is 15,99.



Table F2.141: Comparison of opinions of surveyed students about the level of importance of the Natural Sciences subject, which is taught them in the context of the new curriculum

			I think that the important subject is: Natural Sciences					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	10	13	31	120	210	384
		% within province	2,6%	3,4%	8,1%	31,3%	54,7%	100%
	Sofala	Number	18	31	97	408	765	1319
		% within province	1,4%	2,4%	7,4%	30,9%	58,0%	100%
	Maputo City	Number	18	20	106	340	518	1002
		% within province	1,8%	2,0%	10,6%	33,9%	51,7%	100%
Total		Number	46	64	234	868	1493	2705
		% within province	1,7%	2,4%	8,7%	32,1%	55,2%	100%

Table F2.142: Chi-square Tests on Comparison of opinions of surveyed students about the level of importance of the Natural Sciences subject, which is taught them in the context of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17,871(a)	8	0,022
Likelihood Ratio	17,365	8	0,027
Linear-by-Linear Association	1,085	1	0,298
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 6,53.

Table F2.143: Comparison of opinions of surveyed students about the level of importance of the Crafts/ Arts subject, which is taught them in the context of the new curriculum

			I think that the important subject is: Crafts/ Arts					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	21	26	61	120	156	384
		% within province	5,5%	6,8%	15,9%	31,3%	40,6%	100%
	Sofala	Number	63	83	250	508	415	1319
		% within province	4,8%	6,3%	19,0%	38,5%	31,5%	100%
	Maputo City	Number	78	82	253	325	264	1002
		% within province	7,8%	8,2%	25,2%	32,4%	26,3%	100%
Total		Number	162	191	564	953	835	2705
		% within province	6,0%	7,1%	20,9%	35,2%	30,9%	100%



Table F2.144: Chi-square Tests on Comparison of opinions of surveyed students about the level of importance of the Crafts/ Arts subject, which is taught them in the context of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	54,472(a)	8	0,000
Likelihood Ratio	53,374	8	0,000
Linear-by-Linear Association	33,107	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 23,00.

Table F2.145: Comparison of opinions of surveyed students about the level of importance of the Visual/ Aesthetic Education subject, which is taught them in the context of the new curriculum

			I think that the important subject is: Visual/ Aesthetic Education					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	17	32	52	107	176	384
		% within province	4,4%	8,3%	13,5%	27,9%	45,8%	100,0%
	Sof ala	Number	38	78	235	488	480	1319
		% within province	2,9%	5,9%	17,8%	37,0%	36,4%	100,0%
	Maputo City	Number	58	71	245	348	280	1002
		% within province	5,8%	7,1%	24,5%	34,7%	27,9%	100,0%
Total		Number	113	181	532	943	936	2705
		% within province	4,2%	6,7%	19,7%	34,9%	34,6%	100,0%

Table F2.146: Chi-square Tests on Comparison of opinions of surveyed students about the level of importance of the Visual/ Aesthetic Education subject, which is taught them in the context of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	54,472(a)	8	0,000
Likelihood Ratio	53,374	8	0,000
Linear-by-Linear Association	33,107	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 23,00.

Table F2.147: Comparison of opinions of surveyed students about the level of importance of the Music Education subject, which is taught them in the context of the new curriculum

			I think that the important subject is Music Education					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	16	14	39	113	202	384
		% within province	4,2%	3,6%	10,2%	29,4%	52,6%	100,0%
	Sofala	Number	51	62	242	466	498	1319
		% within province	3,9%	4,7%	18,3%	35,3%	37,8%	100,0%
	Maputo City	Number	52	75	246	337	292	1002
		% within province	5,2%	7,5%	24,6%	33,6%	29,1%	100,0%
Total		Number	119	151	527	916	992	2705
		% within province	4,4%	5,6%	19,5%	33,9%	36,7%	100,0%

Table F2.148: Chi-square Tests on Comparison of opinions of surveyed students about the level of importance of the Music Education subject, which is taught them in the context of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	74,339(a)	8	0,000
Likelihood Ratio	78,306	8	0,000
Linear-by-Linear Association	45,394	1	0,000
N of Valid Cases	2705		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 16,18.

Table F2.149: Comparison of opinions of surveyed students about the level of importance of the Physical Education subject, which is taught them in the context of the new curriculum

			I think that the important subject is Physical Education					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	15	17	29	113	210	384
		% within province	3,9%	4,4%	7,6%	29,4%	54,7%	100,0%
	Sofala	Number	30	55	184	401	649	1319
		% within province	2,3%	4,2%	13,9%	30,4%	49,2%	100,0%
	Maputo City	Number	35	38	192	301	436	1002
		% within province	3,5%	3,8%	19,2%	30,0%	43,5%	100,0%
Total		Number	80	110	405	815	1295	2705
		% within province	3,0%	4,1%	15,0%	30,1%	47,9%	100,0%

Table F2.150: Chi-square Tests on Comparison of opinions of surveyed students about the level of importance of the Physical Education subject, which is taught them in the context of the new curriculum

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39,641 (a)	8	0,000
Likelihood Ratio	41,849	8	0,000
Linear-by-Linear Association	14,656	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 11,36.

Table F2.151: Comparison of opinions of surveyed students about the level of their preference to the new curriculum Portuguese textbook

			My preferable textbook is Portuguese textbook					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	7	6	9	83	279	384
		% within province	1,8%	1,6%	2,3%	21,6%	72,7%	100%
	Sofala	Number	23	6	63	248	979	1319
		% within province	1,7%	,5%	4,8%	18,8%	74,2%	100%
	Maputo City	Number	19	9	41	159	774	1002
		% within province	1,9%	,9%	4,1%	15,9%	77,2%	100%
Total		Number	49	21	113	490	2032	2705
		% within province	1,8%	,8%	4,2%	18,1%	75,1%	100%

Table F2.152: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum Portuguese textbook

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16,105(a)	8	0,041
Likelihood Ratio	16,207	8	0,040
Linear-by-Linear Association	,921	1	0,337
N of Valid Cases	2705		

a 1 cells (6,7%) have expected count less than 5. The minimum expected count is 2,98.

Table F2.153: Comparison of opinions of surveyed students about the level of their preference to the new curriculum Local language textbook

			My preferable textbook is: Local language textbook					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	36	35	76	99	138	384
		% within province	9,4%	9,1%	19,8%	25,8%	35,9%	100%
	Sofala	Number	62	52	786	182	237	1319
		% within province	4,7%	3,9%	59,6%	13,8%	18,0%	100%
	Maputo City	Number	94	90	286	243	289	1002
		% within province	9,4%	9,0%	28,5%	24,3%	28,8%	100%
Total	Number	192	177	1148	524	664	2705	
	% within province	7,1%	6,5%	42,4%	19,4%	24,5%	100%	

Table F2.154: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum Local language textbook

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	323,590(a)	8	0,000
Likelihood Ratio	332,405	8	0,000
Linear-by-Linear Association	0,246	1	0,620
N of Valid Cases	2705		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 25,13.

Table F2.155: Comparison of opinions of surveyed students about the level of their preference to the new curriculum Local language textbook by gender

			My preferable textbook is: Local language textbook					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	126	93	640	269	341	1469
		% within gender	8,6%	6,3%	43,6%	18,3%	23,2%	100%
	Female	Number	66	84	508	255	323	1236
		% within gender	5,3%	6,8%	41,1%	20,6%	26,1%	100%
Total	Number	192	177	1148	524	664	2705	
	% within gender	7,1%	6,5%	42,4%	19,4%	24,5%	100%	

Table F2.156: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum Local language textbook by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15,291(a)	4	0,004
Likelihood Ratio	15,504	4	0,004
Linear-by-Linear Association	10,383	1	0,001
N of Valid Cases	2705		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 80,88.

Table F2.157: Comparison of opinions of surveyed students about the level of their preference to the new curriculum English textbook

			My preferable textbook is: English textbook					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	17	33	53	111	170	384
		% within province	4,4%	8,6%	13,8%	28,9%	44,3%	100,0%
	Sofala	Number	39	57	201	435	587	1319
		% within province	3,0%	4,3%	15,2%	33,0%	44,5%	100,0%
	Maputo City	Number	31	42	133	321	475	1002
		% within province	3,1%	4,2%	13,3%	32,0%	47,4%	100,0%
Total		Number	87	132	387	867	1232	2705
		% within province	3,2%	4,9%	14,3%	32,1%	45,5%	100,0%

Table F2.158: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum English textbook

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19,112(a)	8	0,014
Likelihood Ratio	17,025	8	0,030
Linear-by-Linear Association	6,342	1	0,012
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 12,35.



Table F2.159: Comparison of opinions of surveyed students about the level of their preference to the new curriculum English textbook by gender

			My preferable textbook is: English textbook					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	37	71	194	435	732	1469
		% within gender	2,5%	4,8%	13,2%	29,6%	49,8%	100,0%
	Female	Number	50	61	193	432	500	1236
		% within gender	4,0%	4,9%	15,6%	35,0%	40,5%	100,0%
Total		Number	87	132	387	867	1232	2705
		% within gender	3,2%	4,9%	14,3%	32,1%	45,5%	100,0%

Table F2 .160: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum English textbook by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26,528(a)	4	0,000
Likelihood Ratio	26,577	4	0,000
Linear-by-Linear Association	17,229	1	0,000
N of Valid Cases	2705		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 39,75.

Table F2.161: Comparison of opinions of surveyed students about the level of their preference to the new curriculum Social Sciences textbook

			My preferable textbook is: Social Sciences textbook					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	11	19	40	132	182	384
		% within province	2,9%	4,9%	10,4%	34,4%	47,4%	100%
	Sofala	Number	40	82	229	467	501	1319
		% within province	3,0%	6,2%	17,4%	35,4%	38,0%	100%
	Maputo City	Number	34	53	185	356	374	1002
		% within province	3,4%	5,3%	18,5%	35,5%	37,3%	100%
Total		Number	85	154	454	955	1057	2705
		% within province	3,1%	5,7%	16,8%	35,3%	39,1%	100%



Table F2.162: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum Social Sciences textbook

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20,967(a)	8	0,007
Likelihood Ratio	21,958	8	0,005
Linear-by-Linear Association	7,384	1	0,007
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 12,07.

Table F2.163: Comparison of opinions of surveyed students about the level of their preference to the new curriculum Moral and Civic Education textbook

			My preferable textbook is: Moral and Civic Education textbook					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	11	21	37	97	218	384
		% within province	2,9%	5,5%	9,6%	25,3%	56,8%	100%
	Sofala	Number	35	51	222	425	586	1319
		% within province	2,7%	3,9%	16,8%	32,2%	44,4%	100%
	Maputo City	Number	23	40	154	339	446	1002
		% within province	2,3%	4,0%	15,4%	33,8%	44,5%	100%
Total		Number	69	112	413	861	1250	2705
		% within province	2,6%	4,1%	15,3%	31,8%	46,2%	100%

Table F2.164: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum Moral and Civic Education textbook

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29,817(a)	8	0,000
Likelihood Ratio	30,581	8	0,000
Linear-by-Linear Association	2,528	1	0,112
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 9,80.



Table F2.165: Comparison of opinions of surveyed students about the level of their preference to the new curriculum Moral and Civic Education textbook by gender

			My preferable textbook is: Moral and Civic Education textbook					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	44	54	231	437	703	1469
		% within gender	3,0%	3,7%	15,7%	29,7%	47,9%	100%
	Female	Number	25	58	182	424	547	1236
		% within gender	2,0%	4,7%	14,7%	34,3%	44,3%	100%
Total		Number	69	112	413	861	1250	2705
		% within gender	2,6%	4,1%	15,3%	31,8%	46,2%	100%

Table F2.166: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum Moral and Civic Education textbook by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10,864(a)	4	0,028
Likelihood Ratio	10,891	4	0,028
Linear-by-Linear Association	0,200	1	0,655
N of Valid Cases	2705		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 31,53.

Table F2.167: Comparison of opinions of surveyed students about the level of their preference to the new curriculum Mathematics textbook

			My preferable textbook is: Mathematics textbook					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	10	16	20	103	235	384
		% within province	2,6%	4,2%	5,2%	26,8%	61,2%	100,0%
	Sofala	Number	28	25	101	288	877	1319
		% within province	2,1%	1,9%	7,7%	21,8%	66,5%	100,0%
	Maputo City	Number	19	14	70	208	691	1002
		% within province	1,9%	1,4%	7,0%	20,8%	69,0%	100,0%
Total		Number	57	55	191	599	1803	2705
		% within province	2,1%	2,0%	7,1%	22,1%	66,7%	100,0%



Table F2.168: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum Mathematics textbook

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21,158(a)	8	0,007
Likelihood Ratio	19,351	8	0,013
Linear-by-Linear Association	6,528	1	0,011
N of Valid Cases	2705		

a 0 cells (,0%) have expected count less than 5. The minimum expected count is 7,81.

Table F2.169: Comparison of opinions of surveyed students about the level of their preference to the new curriculum Natural Sciences textbook

			My preferable textbook is: Natural Sciences textbook					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	11	12	32	129	200	384
		% within province	2,9%	3,1%	8,3%	33,6%	52,1%	100%
	Sofala	Number	22	28	145	385	739	1319
		% within province	1,7%	2,1%	11,0%	29,2%	56,0%	100%
	Maputo City	Number	13	21	119	338	511	1002
		% within province	1,3%	2,1%	11,9%	33,7%	51,0%	100%
Total		Number	46	61	296	852	1450	2705
		% within province	1,7%	2,3%	10,9%	31,5%	53,6%	100%

Table F2.170: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum Natural Sciences textbook

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15,957(a)	8	0,043
Likelihood Ratio	15,586	8	0,049
Linear-by-Linear Association	0,019	1	0,892
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 6,53.

Table F2.171: Comparison of opinions of surveyed students about the level of their preference to the new curriculum Crafts/ Arts textbook

			My preferable textbook is: Crafts/ Arts textbook					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	9	26	61	116	172	384
		% within province	2,3%	6,8%	15,9%	30,2%	44,8%	100%
	Sofala	Number	67	83	300	460	409	1319
		% within province	5,1%	6,3%	22,7%	34,9%	31,0%	100%
	Maputo City	Number	96	78	295	293	240	1002
		% within province	9,6%	7,8%	29,4%	29,2%	24,0%	100%
Total		Number	172	187	656	869	821	2705
		% within province	6,4%	6,9%	24,3%	32,1%	30,4%	100%

Table F2.172: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum Crafts/ Arts textbook

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	101,007(a)	8	0,000
Likelihood Ratio	100,676	8	0,000
Linear-by-Linear Association	81,027	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 24,42.

Table F2.173: Comparison of opinions of surveyed students about the level of their preference to the new curriculum Visual/ Aesthetic Education textbook

			My preferable textbook is: Visual Aesthetic Education					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	19	25	53	119	168	384
		% within province	4,9%	6,5%	13,8%	31,0%	43,8%	100%
	Sofala	Number	43	80	255	462	479	1319
		% within province	3,3%	6,1%	19,3%	35,0%	36,3%	100%
	Maputo City	Number	63	70	244	347	278	1002
		% within province	6,3%	7,0%	24,4%	34,6%	27,7%	100%
Total		Number	125	175	552	928	925	2705
		% within province	4,6%	6,5%	20,4%	34,3%	34,2%	100%



Table F2.174: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum Visual/ Aesthetic Education textbook

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	101,007(a)	8	0,000
Likelihood Ratio	100,676	8	0,000
Linear-by-Linear Association	81,027	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 24,42.

Table F2.175: Comparison of opinions of surveyed students about the level of their preference to the new curriculum Music Education textbook

			My preferable textbook is: Music Education textbook					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	13	24	33	114	200	384
		% within province	3,4%	6,3%	8,6%	29,7%	52,1%	100%
	Sofala	Number	48	63	257	449	502	1319
		% within province	3,6%	4,8%	19,5%	34,0%	38,1%	100%
	Maputo City	Number	53	72	242	306	329	1002
		% within province	5,3%	7,2%	24,2%	30,5%	32,8%	100%
Total		Number	114	159	532	869	1031	2705
		% within province	4,2%	5,9%	19,7%	32,1%	38,1%	100%

Table F2.176: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum Music Education textbook

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	36,149(a)	8	0,000
Likelihood Ratio	37,815	8	0,000
Linear-by-Linear Association	22,863	1	0,000
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 12,49.



Table F2.177: Comparison of opinions of surveyed students about the level of their preference to the new curriculum Physical Education textbook

			My preferable textbook is: Physical Education textbook					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	13	17	31	111	212	384
		% within province	3,4%	4,4%	8,1%	28,9%	55,2%	100%
	Sofala	Number	33	47	185	392	662	1319
		% within province	2,5%	3,6%	14,0%	29,7%	50,2%	100%
	Maputo City	Number	42	51	178	295	436	1002
		% within province	4,2%	5,1%	17,8%	29,4%	43,5%	100%
Total		Number	88	115	394	798	1310	2705
		% within province	3,3%	4,3%	14,6%	29,5%	48,4%	100%

Table F2.178: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum Physical Education textbook

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	36,149(a)	8	0,000
Likelihood Ratio	37,815	8	0,000
Linear-by-Linear Association	22,863	1	0,000
N of Valid Cases	2705		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 12,49.

Table F2.179: Comparison of opinions of surveyed students about the level of their preference to the new curriculum Physical Education textbook by gender

			My preferable textbook is: Physical Education textbook					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
gender	Male	Number	59	59	199	403	749	1469
		% within gender	4,0%	4,0%	13,5%	27,4%	51,0%	100%
	Female	Number	29	56	195	395	561	1236
		% within gender	2,3%	4,5%	15,8%	32,0%	45,4%	100%
Total		Number	88	115	394	798	1310	2705
		% within gender	3,3%	4,3%	14,6%	29,5%	48,4%	100%



Table F2.180: Chi-square Tests on Comparison of opinions of surveyed students about the level of their preference to the new curriculum Physical Education textbook by gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17,466(a)	4	0,002
Likelihood Ratio	17,613	4	0,001
Linear-by-Linear Association	0,930	1	0,335
N of Valid Cases	2705		

a 0 cells (0,0%) have expected count less than 5. The minimum expected count is 40,21.

Table F2.181: Comparison of the level of reading other books from surveyed students beyond their textbooks

			Bey ond my textbooks, I read other books					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	9	11	10	73	281	384
		% within province	2,3%	2,9%	2,6%	19,0%	73,2%	100%
	Sof ala	Number	38	13	77	293	898	1319
		% within province	2,9%	1,0%	5,8%	22,2%	68,1%	100%
	Maputo City	Number	19	10	43	168	762	1002
		% within province	1,9%	1,0%	4,3%	16,8%	76,0%	100%
Total		Number	66	34	130	534	1941	2705
		% within province	2,4%	1,3%	4,8%	19,7%	71,8%	100%

Table F2.182: Chi-square Tests on Comparison of the level of reading other books from surveyed students beyond their textbooks

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	32,672(a)	8	0,000
Likelihood Ratio	31,391	8	0,000
Linear-by-Linear Association	5,086	1	0,024
N of Valid Cases	2705		

a 1 cells (6,7%) have expected count less than 5. The minimum expected count is 4,83.



Table F2.183: Comparison of the level of no reading other books from surveyed students beyond their textbooks

			Beyond my textbooks, I don't read other books					Total
			Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
province	Niassa	Number	202	43	30	55	54	384
		% within province	52,6%	11,2%	7,8%	14,3%	14,1%	100,0%
	Sofala	Number	491	203	251	165	209	1319
		% within province	37,2%	15,4%	19,0%	12,5%	15,8%	100,0%
	Maputo City	Number	483	169	227	60	63	1002
		% within province	48,2%	16,9%	22,7%	6,0%	6,3%	100,0%
Total		Number	1176	415	508	280	326	2705
		% within province	43,5%	15,3%	18,8%	10,4%	12,1%	100,0%

Table F2.184: Chi-Square on Comparison of the level of no reading other books from surveyed students beyond their textbooks

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	32,672(a)	8	0,000
Likelihood Ratio	31,391	8	0,000
Linear-by-Linear Association	5,086	1	0,024
N of Valid Cases	2705		

a. 1 cells (6,7%) have expected count less than 5. The minimum expected count is 4,83.