

CHAPTER 6

Qualitative and quantitative research to determine the effect of cooperative paired reading on the human potential of some senior phase learners in inclusive education settings

6.1 INTRODUCTION

In order to understand phenomena in the world, a researcher has to decide on a specific research paradigm. Research paradigms can be quantitative or qualitative. Schurink (1998:241) describes the main differences between the two paradigms in the following way:

The quantitative paradigm is based on positivism which takes scientific explanation to be nomothetic (i.e. based on universal laws). Its main aims are to objectively measure the social world, to test hypotheses and to predict and control human behaviour.

In contrast, the qualitative paradigm stems from an anti-positivistic, interpretative approach, is ideographic, thus holistic in nature, and the main aim is to understand social life and the meaning that people attach to everyday life.

Quantitative research therefore has a “measuring” character, while the character of qualitative research is “understanding”.

Problems that exist in the world can sometimes be very complicated which might force the researcher to make use of a combined quantitative and qualitative approach to arrive at a true understanding of the problem. In the case of this study the researcher had to make such a choice because determining whether the human potential of learners was being maximised is a very complex process – a process of

trial and error that requires continuous monitoring and adjustment of interventions to achieve the best results. Action research was selected as the type of research that was best suited to explore the problem. Before action research is explained in detail, it should be realised that action research involves both quantitative and qualitative research paradigms. In order to provide more clarity on these paradigms and the research that was utilised in this chapter, the following sub-research questions have been identified to guide the unfolding of the chapter:

- What data-collection methods are common to quantitative research paradigms?
- What data-collection methods are common to qualitative research paradigms?
- What is action research?
- How can action research be used to determine growth in the understanding of English as the medium of instruction and therefore also in the realisation of human potential?
- What are the findings of the quantitative and qualitative research?

The first sub-question is addressed within the next paragraphs.

6.2 QUANTITATIVE RESEARCH PARADIGMS: DATACOLLECTION METHODS

The following data collection methods are described by De Vos & Fouché (1998:89-90) as being common to quantitative research:

6.2.1 QUESTIONNAIRES

Questionnaires can take many forms, such as mailed or posted questionnaires, telephonic questionnaires or group questionnaires. Questionnaires have open or closed questions or statements. The respondent has to react to those questions.

6.2.2 CHECKLISTS

Checklists consist of a series of statements. The respondent has to indicate the items that are relevant to him/her by marking “yes” or “no” for each item. A checklist can also be viewed as a type of questionnaire.

6.2.3 INDEXES AND SCALES

Nominal scales, ordinal scales including summated rating, graphic rating, numerical scales, itemised rating, comparative rating, self-anchored rating scales and Likert scaling, interval-ratio scaling, such as Thurstone scales and the semantic differential are examples of indices and scales.

6.3 QUALITATIVE RESEARCH PARADIGMS: DATA COLLECTION METHODS

6.3.1 PARTICIPANT OBSERVATION

Denzin and Lincoln (1994:377) point out that observation is one of the earliest and most basic forms of research and that it is likely to be used in conjunction with others such as participant observation, experimental design and interviewing. Babbie (1992:9) describes participant observation as follows:

... the researcher actually joins in the events under study and examines the phenomenon from the inside.

Denzin and Lincoln (1994:379) do however indicate that observational research can differ, depending on the relationship of researchers to their subjects. The roles of researchers as far as their involvement in the setting is concerned can also differ. The following roles have been listed by Denzin and Lincoln (1994:379) according to Gold's (1958) classic typology of naturalistic research roles:

- The complete participant.
- The participant-as-observer.
- The observer-as-participant.
- The complete observer.

Schurink (1998:260) provides a comprehensive description of each role.

6.3.1.1 The full observer

These researchers are complete outsiders and strive to be objective. Becoming invisible is an important aim.

6.3.1.2 The observer-as-participant

In order to create a friendly atmosphere and to blend in with the setting while observing, the observer-as-participant would interact casually and non-directively with the research participants without becoming part of the setting.

6.3.1.3 The participant-as-observer

The interaction of the participant-as-observer with participants is close enough to obtain an insider view, but he/she does not participate in the activities that will make him/her a true member of the group.

6.3.1.4 The full participant

The full participant is part of the setting from the start or becomes involved in the central activities of the subjects under study during the course of the research.

6.3.2 INTERPRETATION OF DOCUMENTS AND RECORDS

De Vos & Fouché (1998:90) points out that according to Denzin and Lincoln (1994) the qualitative researcher is challenged distinctively by analysing and interpreting written material and this enables the researcher to collect data which would otherwise not have been available.

6.3.3 IN DEPTH, FACE-TO-FACE INTERVIEWING

Denzin and Lincoln (1994:361) explain that one of the most common and most powerful ways of trying to understand other human beings is through interviews. Individual face-to-face verbal interchange is the most common type of

interviewing, but it can take many forms such as face-to-face group interviewing, mailed or self-administered questionnaires and telephone surveys. Interviews can be used for many purposes such as marketing, gathering political opinions, for therapeutic reasons or to produce data that will be academically analysed. Interviews can be used to measure specific aspects or to understand a specific phenomenon. Denzin and Lincoln (1994:361) continue by explaining that interviews can be structured, semi-structured or unstructured. Structured and unstructured interviews will be explained in more detail in the paragraphs that follow.

6.3.3.1 Structured interviewing

Structured interviewing has the following characteristics (Denzin and Lincoln, 1994:361-362):

- The interviewer asks each respondent a series of pre-established questions with a limited set of response categories.
- Except for the use of an infrequent open-ended question, there is not much room for variation in response.
- The interviewer records responses according to a pre-established coding scheme.
- The same set of questions is asked to all respondents and questions are asked in the same order or sequence. The interviewer treats every interview situation in the same way.
- The structured interview setting implies that flexibility is limited as far as the way in which questions are asked or answered, is concerned. It also has a stimulus-response format.
- Examples of structured interviews are telephonic interviews, face-to-face interviews in households, intercept interviews in shopping malls or interviews for survey research.

6.3.3.2 Unstructured interviewing

Unstructured interviewing differs from structured interviewing in the following ways:

- Structured interviewing is aimed at obtaining precise data of a codable nature in order to explain behaviour within categories that have been pre-established, while unstructured interviewing is aimed at understanding the complex behaviour of members of society. During unstructured interviewing it is not acceptable to impose any previous categorisation, as it would limit the field of enquiry.
- The essence of unstructured interviewing is *the establishment of a human-to-human relation with the respondent and the desire to understand rather than to explain* (Denzin and Lincoln, 1994:366).

6.3.4 FOCUS GROUP INTERVIEWING

During focus group interviewing an open group discussion takes place between specifically chosen persons who are led by a group leader. The group leader should be trained and experienced in handling group dynamics (De Vos & Fouché 1998:90).

6.3.5 AUDIO-VISUAL MATERIAL

Analysing audio-visual material can be used in many ways to obtain information about a specific subject or phenomenon. As far as qualitative research is concerned, it can be very valuable.

With a better understanding of quantitative and qualitative research paradigms, an understanding of the term “action research” that was referred to previously, will be necessary at this stage and will be dealt with in the next paragraphs.

6.4 ACTION RESEARCH

6.4.1 DEFINING ACTION RESEARCH

Hodgkinson and Maree (1998:52-53) point out that it is difficult to provide an exact definition of what action research is but do however provide a few definitions that are sufficient for the purposes of this research. Some of these definitions are listed below:

Action research is ...

- ... *a small scale intervention in the functioning of the real world and a close examination of the effects of such intervention* (Cohen and Manion, 1994).
- ... *collaborative, critical enquiry by the academics themselves (rather than expert educational researchers) into their own teaching practice, into problems of students' learning and into curriculum problems* (Zuber-Skerritt, 1992).

From the above definitions it is clear that action research is concerned with understanding a specific situation. The researcher becomes involved in the situation, intervenes and monitors the process. The researcher also works closely with the individuals that find themselves in the situation. The following definition of Brown and MacIntyre (1981) that is documented by Hodgkinson and Maree (1998:53) sheds more light on the process of action research:

The research questions arise from an analysis of the problems of the practitioners in the situation and the immediate aim then becomes that of understanding those problems. The researcher/actor, at an early stage, formulates speculative, tentative, general principles in relation to the problems that have been identified; from these principles, hypotheses may then be generated about what action is likely to lead to the desired improvements in practice.

Such action will then be tried out and data on its effects collected; these data are used to revise the earlier hypotheses and identify more

appropriate action that reflects a modification of the general principles. Collection of data on the effects of this new action may then generate further hypotheses and modified principles, and so on as we move towards a greater understanding of, and desirable change in, the practice that is achieved.

When considering the above definition a few important aspects need to be emphasised. The first is that action research aims to understand specific problems. The participatory nature of action research can clearly be identified, with the researcher entering the specific context and implementing some form of intervention, after having planned it. The important place of evaluation becomes clear when the effects of the interventions are evaluated. The cyclical nature of action research can be observed when the data obtained through evaluation lead to the planning of better ways of intervention and its implementation, followed by evaluation. The steps that are followed during action research need clarification at this stage.

6.4.2 STEPS OF ACTION RESEARCH

Throughout the research the following steps can be identified: planning, implementation, observation and evaluation. These steps have been identified by Hodgkinson and Maree (1998:58), who point out that the steps need not always start at the same point and that according to Stringer (1996) the researcher may move backwards and forwards. Some steps may be skipped and the direction of the process may be changed radically at certain stages. The steps that can be followed in action research, according to Hodgkinson and Maree (1998:61) are illustrated in the following table:

TABLE 6.1: STEPS OF ACTION RESEARCH

STAGE	ACTIVITIES
Planning	<ul style="list-style-type: none"> <input type="checkbox"/> Identify general idea or vision <input type="checkbox"/> Formulate problem in context <input type="checkbox"/> State questions to be addressed <input type="checkbox"/> Review literature <input type="checkbox"/> Modify or refine questions/problems <input type="checkbox"/> Define strategy <input type="checkbox"/> Prioritise activities <input type="checkbox"/> List tasks
Implementation	<ul style="list-style-type: none"> <input type="checkbox"/> Identify performance criteria <input type="checkbox"/> Implement intervention
Observation	<ul style="list-style-type: none"> <input type="checkbox"/> Gather evidence <input type="checkbox"/> Classify and analyse data <input type="checkbox"/> Monitor effects <input type="checkbox"/> Note problems
Evaluation	<ul style="list-style-type: none"> <input type="checkbox"/> Review outcomes <input type="checkbox"/> Judge effectiveness <input type="checkbox"/> Establish cost-benefit <input type="checkbox"/> Make recommendation <input type="checkbox"/> Revise plan

[Adapted from Hodgkinson and Maree (1998:61)]

The above steps in action research were used as a guideline for the project. The aim of the overview of basic research concepts such as quantitative and qualitative research as well as action research was to orientate the reader and to enable him/her to relate the whole process of the research project to a specific research context and therefore have a better understanding. The next section will describe the research that was undertaken to maximise human potential, through a cooperative paired reading programme. As mentioned in previous chapters, the term ‘achieving growth in the realisation of human potential’ will be used to

describe maximising human potential in practice. It was also indicated that the term ‘maximising human potential’ is used when dealing with theory. These terminologies will therefore be used interchangeably throughout the chapter depending on whether it refers to theory or practice. Before the phases of action research that were followed in this study will be discussed in detail, the reader will be briefed on two important aspects that will provide more background information to the study. In the first place more information is provided about the DRUM magazine, which was used as material for the study. In the second place the competency level of the learners who participated in the project will be reflected upon.

6.4.3 A BRIEF DESCRIPTION OF DRUM

DRUM was first published in the 1950’s. According to Nicol (1991:xi) the magazine has gained fame over the years:

*Certainly, no other magazine in the world has generated as much publicity so long after its heyday as the **DRUM**. In recent years its stories, both fact and fiction, have been anthologised in at least six books; and following the publication of Schadeberg’s photographic selections, its pictures continue to be used again and again throughout the world. And still more books are planned as are television series and a Hollywood movie. But then **DRUM** has already given rise to a play, *Sophiatown!* , which attracted good houses in South Africa and Britain; a photographic exhibition which toured Europe, Britain and the United States; and two popular documentaries. All this without counting the journalists’ or the editors’ own books inspired by working on **DRUM**, or the newspaper articles, academic studies, even a university course at one of South Africa’s oldest institutions, which have followed in its wake.*

Barron (2000:17) agrees with this statement by saying that DRUM, which was published in as many as 15 African countries during the ‘50s and ‘60s, was

... in its day arguably the most successful, certainly the most unpredictable, fearless and independent, magazine in Africa.

For an overview of the popularity of the magazine during recent years, the reader is referred to the appendix dealing with the readership update, at the end of the manuscript.

The interesting nature of the magazine is reflected in the following description of advertisements in the magazine by Nicol (1991:xii):

...advertises for Karroo nerve-pain tablets, Puritone blood-purifying mixture, Ipana toothpaste, Boxer tobacco, Bongo shoes, Battersby hats, Waverly blankets - or the boxing hero of the time, Jake Tuli, advertising Post Toasties, Blue Seal petroleum jelly, Coca-Cola or Commando Round cigarettes ...

The magazine is described by Nicol (1991:xii) as being a reflection of happenings in South Africa. The authors of various articles portrayed a lot of talent since the early days of the magazine. These ideas of Nicol (1991:xi) about the magazine are reflected in his own words:

*... it was also a vehicle, at least initially, for an imaginative writing which marked the beginning of the modern short story by blacks in South Africa. Among **Drum's** contributors were Peter Abrahams, Alex la Guma, Es'kia Mphahlele and Richard Rive, who all later reached international audiences. But perhaps more importantly, **Drum** attracted a coterie of young writing talent into its newsroom. They were highly literate, sophisticated men with an understanding and love of the English language ...They told a South African story full of the bathos and paradoxes which rule our lives as much now as then ...*

From the above descriptions it is clear that the roots of DRUM can be found in South African soil and that in many ways it reflects the daily living of millions of South Africans.

6.4.4 A REFLECTION ON THE GENERAL LEVEL OF COMPETENCE IN READING OF THE LEARNERS WHO PARTICIPATED IN THIS PROJECT

It is important at this stage to reflect on the reading level of the learners participating in this particular research project. As it was mentioned elsewhere, the learners' competence in English in general, was limited to mainly "yes" or "no" responses. The level of competence did however range from being illiterate to one learner whose competence in English was above average. The first concern was to find a way of assisting the illiterate learners. In order to provide learners with a basis in phonological awareness skills, which included becoming acquainted with the sounds in English, a literacy programme (Joubert and Kaderli, 1995) was introduced. The tasks that learners performed through the use of the programme were linked, as far as possible, to a specific context in different issues of DRUM, to ensure that words and sounds were not encountered outside a specific context.

As learners became familiar with the sounds in English and were able to read individual words, the procedure of paired reading was introduced. Paired reading is a vehicle through which the skills that have been identified by different researchers (as explained in the programme) could easily be addressed. It should also be indicated that the learner with the above average reading competency was continuously challenged to grow in the realisation of his potential by assigning compelling learning tasks to him. With this information given, the process of action research that was followed to determine the effect of the cooperative paired reading programme is discussed next.

6.5 ACTION RESEARCH TO DETERMINE THE EFFECT OF COOPERATIVE PAIRED READING ON THE HUMAN POTENTIAL OF LEARNERS WITH LIMITED ENGLISH PROFICIENCY

The cooperative paired reading programme model has already been discussed in detail in the previous chapter. The action research that took place to monitor the effectiveness of the programme to maximise human potential (including an improvement in reading) will be discussed in the next section. The action research consisted of two cycles with different phases, which are explained in more detail in the next paragraphs.

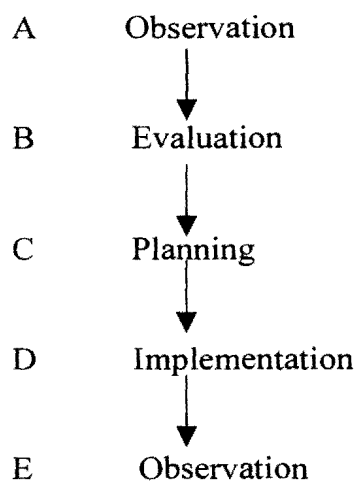
6.5.1 STEPS OF ACTION RESEARCH

The process of action research that took place is explained by the following diagram that illustrates the sequence of steps that were followed. The research process consisted of the following two cycles:

TABLE 6.2 STEPS OF ACTION RESEARCH IN THIS PROJECT

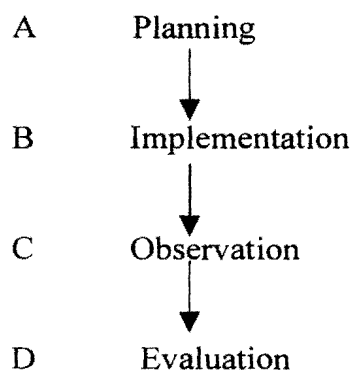
CYCLE 1

PHASE:



CYCLE 2

PHASE:



6.5.2 CYCLE 1 OF ACTION RESEARCH

6.5.2.1 Observation

a. *Identifying the problem*

Cycle one started with observation of the problem. During a routine visit to a special school a problem was observed in two specific classrooms. The learners had been referred to special education at the end of the previous year, mainly because of English language problems. Other reasons for referring the learners to special education were because of the learners having failed their grades repeatedly and the opinions of the principals of the previous schools that the learners would not show progress in mainstream education. The researcher was of the opinion that these learners were not special education candidates as language problems can never be a basis for excluding learners from mainstream education.

It could also not be said with any certainty that these learners had below average IQ's as the learners had been admitted to the school without any IQ tests being done. The focus was also not on specific IQ scores. The researcher believed that these two groups consisted of individuals whose unique compositions of human potential could be maximised. Even though they had been marginalized by a system that was beyond their control, the fact that they were humans with human potential qualified them to attend ordinary education/mainstream education. The group was therefore not viewed by the researcher as “special education learners” but as normal learners who should have been catered for in ordinary education. The group would therefore be treated as if they were in an inclusive education setting, as they were all different as far as age, gender, human potential, personalities, aptitudes, interests, language abilities and so forth are concerned. These differences are also found in inclusive education settings. (The issue of inclusive education has already been described in detail in Chapter two).

b *Observing the setting*

It was observed that the two groups of learners could in general, understand very little English and reading English was another problem. As the medium of instruction was mainly English (with a little Afrikaans), the problem that the learners experienced with English had to be solved. Learners had been grouped by the school in such a way that the one group had a concentration of older learners while the learners in the other class were younger. The average age of the one group was thirteen years and eight months, while the average age of the other group was twelve years and four months. One group was therefore on average one year and four months older than the other. The reason for this grouping by the school was mainly to improve the cooperation of learners within each group and that young learners would not be dominated by older learners. Although both facilitators seemed to be positive to solve the language problems of the learners, one facilitator seemed more enthusiastic than the other. Both facilitators were experienced teachers and it seemed that they were dedicated to their profession. (For the purposes of this specific project the term “facilitators” is used to refer to the teachers, as their task was to facilitate learning.)

When observing the learners, in January they appeared to be disorientated and it seemed as if they were still trying to find their way amongst all the school buildings and unfamiliar faces as they had only been in the school for a week or so. When communicating with the facilitators, they used only a few words, consisting of a mixture between their home language (Sotho), English and Afrikaans.

The setting was observed to be very promising to accommodate interventions aimed at solving the problem. The opinion of the principal was that any assistance would be welcome.

c *Learning programme*

Concerning the learning programme that was followed, it was observed that the school was following an English programme entitled: “Getting to know English” (Joubert and Kaderli, 1995). The programme was developed for immigrants to learn English in a South African context and had been used successfully for a number of years. It seemed to focus on phonics, learning new words and short sentences, while dealing with a number of basic topics. The programme mainly seemed to accommodate bottom-up approaches to learn English, such as the phonics approach and look-and-say approaches. After having interviewed the authors of the programme on numerous occasions, the researcher gained a clear understanding of how the programme was developed. The main approach (as far as teaching English as a second or foreign language is concerned) that was followed was Communicative Language teaching and the authors reported that the programme had a high success rate. The researcher realised that, according to a literature study, reading interventions should include both bottom-up and top-down approaches. A limitation in the above programme was that it lacked sufficient top-down approaches. It was decided to address this aspect in research. Another limitation that was observed was that the programme was only directed at learning English. It was believed that a programme to improve competency in English should also be aimed at maximising the human potential of each individual. With these ideas in mind, the extent of the problem had to be determined, which led to the next step in action research, which was evaluation.

6.5.2.2 Evaluation

i *Evaluation of the extent of the problem*

Evaluation was aimed at gaining information about the problem, which was discussed under the observation phase. Various aspects of the problem situation had to be evaluated. In the first phase it had to be determined if the learners were indeed experiencing problems with English and to what extent. It was decided to focus on one aspect, which was reading. Reading is one of the four language skills

through which each of the other skills - speaking, listening and - writing can be developed. Reading was therefore seen as the key skill and it would inevitably also involve the rest of the skills. The evaluation of the reading skills of the learners would be a quantitative evaluation to determine in terms of numbers what each learner's competency level was. The quantitative evaluation is discussed in more detail in the next paragraphs.

ii *Selecting a quantitative research design*

In order to obtain more information about the problem that learners experienced it was decided to plan an experiment that utilised the comparison group pre-test-post-test design. The reason for choosing this design was that it would give baseline information about the extent of the problem and, if the researcher would decide to implement an intervention programme, (which later proved to be the case) information could also be obtained through this specific design at the end of the intervention period.

a *Method of sampling*

The method of sampling that was planned for the experimental study was non-probability sampling where available samples were used. The two groups of learners that were selected to be studied were the only two groups that experienced the problem and the researcher therefore had to select what was available. The one group consisted of 16 learners, while the other group had 20. The total of the population was thus 36 learners. One classroom was assigned to be the experimental group and the other classroom would be the control group. The experimental group was on average one year and four months younger than the other group.

b *Measuring Instruments*

For the quantitative research design two instruments were used to collect the data (to determine the extent of the language problems regarding reading in English). These tests are described in the next paragraphs.

1 **Test of Basic Literacy in English**

The test was designed by the Human Sciences Research Council in 1992. The sub tests that were used, were the following:

Test 1: Reading Skills

Section 1: Practical knowledge and Section 2: Reading comprehension

The literacy test was used as a pre- and post-test to obtain quantitative figures about the levels of literacy of learners in reading (practical knowledge and comprehension) at the beginning of the year. Both experimental and control groups were assessed in this manner. (The same test would be used to obtain measures at the end of the year to determine whether any progress had been made). The selection of the test was made in consultation with staff of the HSRC. The researcher selected the test on the following grounds:

- 1 It was standardised on a population that was similar to the population on which it was conducted.
- 2 The multiple-choice character of the test would ensure that writing problems would not interfere with reading.
- 3 The test consists of two sections: Practical knowledge and reading comprehension. The researcher wanted to obtain information about the learners' skills to read a sentence, comprehend it and select the correct answer. The test was designed for this purpose.
- 4 The test was easy to conduct and administer.

A test was required that could accommodate the use of a translator (for explaining the instructions of the test only). At the beginning of the year when the pre-test

was conducted, the need did indeed arise for translating some of the instructions into the learners' first language. No part of the test itself was translated.

2 The One Minute Reading Test

The One Minute Reading Test was used to determine the number of words that a learner reads per minute. The number of words read is calculated and a reading age in months is supplied by the norm tables. The main purpose of using the One Minute Reading Test was to determine whether the reading speed of learners would improve during the year. The emphasis was not on the reading age that was obtained for each learner, but on the progress that was made in each case. The researcher therefore wanted to determine if the intervention caused learners to read faster. In the second place, another aim of using the One Minute Reading Test was to use it as a control measure for the multiple-choice character of the Literacy test. The possibility of obtaining an exceptionally high score on the Literacy Test by chance would be overruled by a very low score during the pre-test phase of the One Minute Reading Test. Although an increase in reading speed might be significant, it would be more significant if the score according to the Literacy Test had also improved. The two tests (Literacy and One Minute Reading) were thus used together to complement each other and in order to be more reliable.

It should be pointed out that even though the two tests were used as pre- and post-test measures, the evaluation phase of Cycle 1 is only concerned with the pre-test results as it clarifies the problem. The posttests are discussed in more detail in the evaluation phase of Cycle 2 of the action research. The use of the tests as post-tests was only mentioned to guide the reader towards the direction that the research would take.

c *Procedure*

Both tests that were mentioned in the previous paragraphs were administered and involved all the learners from the experimental and control groups. The Test of Basic Literacy in English is a multiple-choice test that each learner had to

complete. An interpreter was used to assist with explaining the overall instructions of the test. An overhead projector was also used to explain the instructions. Before learners started answering the questions, it was ascertained that all the participants understood what was expected of them. The practice examples helped to enforce the activity that was required. After learners had completed the Basic Literacy Test, the researcher conducted the One Minute Reading Test. Each individual of both groups completed the test.

d *Methods of data analysis*

The results of both tests were analysed quantitatively. The results of the Basic Literacy Test were calculated out of a total of 51. The totals that were achieved through the One Minute Reading Test were used to calculate a reading age for each individual, which meant that each learner's reading was on a specific level.

e *Results*

The results are discussed in more detail in the section: Quantitative Research: Data analysis and interpretation. It is however important to point out a few interesting findings:

- As far as the results of the One Minute Reading pre-test are concerned, the control group performed much better than the experimental group. The average score in months of the control group was 8 years and 8 months, while the experimental group had an average reading age of 8 years. The control group was therefore eight months ahead of the experimental group.
- The scores on the Literacy test showed that the control group had an average percentage of 55,51%, while the experimental group had scored only 43,29% on average. The fact that the experimental group started with a backlog was a tremendous challenge to the researcher.

iii *Selecting a Qualitative Research Design*

Another form of evaluation that had to be conducted examined the existence of cooperative and mega life skills qualitatively through interviews as these skills would be indicators of metalearning. As metalearning leads to the maximising of human potential, baseline information about these aspects was necessary. Metalearning, cooperative and mega life skills, as well as its relation to maximising human potential has already been discussed in Chapter 3. It will therefore not be discussed further at this stage.

a *Method of Sampling and Data Collection Method*

In order to select learners for the interviews the researcher used the method of purposive sampling, where learners were selected on the basis of the test scores on the Test of Basic Literacy in English (1992). In order to represent the weakest group of learners, two learners with the two lowest scores in each group (control and experimental group) were selected. The average group was represented by selecting two learners whose scores were directly in the middle of the norm table of the Basic literacy test. The group of learners with the above average scores was represented by selecting the two learners with the two top scores. Three learners were therefore selected from the control group and three from the experimental group. By following this method the researcher ensured that the whole population of the experimental and control groups was represented.

These learners were in general from poor socio economic backgrounds, except the one learner, whose mother was a teacher. All the learners were staying in the township and in general one could notice from their clothes that they were poor. Their home language was Sotho and, except for the above learner and another one they understood no or very little English. The one facilitator reported that they were in general very shy and were not willing to take risks. For a more detailed description of the population out of which the learners for the interviews (experimental group) were selected, the reader is referred to the facilitator's diary that is presented after the interviews. The learners in the control group did not

differ much, except for the fact that they were older and more proficient in English reading. The proficiency of the learners who had been selected for the interviews were however more or less the same, as the selection had been made on the basis of test scores that indicated proficiency.

The data collection method that was used, was interviewing. The questions that were used, were structured and the answers that were given would, after being analysed qualitatively according to specific categories, indicate whether cooperative and mega life skills existed or not. Learners were exposed to real life problem situations that contained elements of cooperative and mega life skills and had to explain how they would handle each situation. The same questions were presented to all six learners and these questions would be repeated to them at the end of the year, to determine whether progress had been made or not. In some cases it was necessary for the researcher to probe in order to gain a better understanding. This part of the research is discussed under Qualitative research: Data analysis and interpretation. As far as the evaluation phase of Cycle 1 is concerned, only the information obtained during the first round of interviews was used to plan intervention strategies. Another aspect that needs to be discussed briefly is the use of an interpreter to overcome the language problem during the interviews. The role of the interpreter will be discussed next.

b *The role of the interpreter*

Owing to the problem that most of the learners experienced to understand English, an interpreter was needed to assist with the interviews of learners. It was also believed that the true thoughts and feelings of the learners would be expressed to a richer extent in their first language. The interpreter was used for interviews with the six learners at the beginning and end of the project.

The interpreter was one of the learners who was exceedingly more proficient in English than the rest of the learners and had scored almost full marks in the Literacy test. The learner was selected in consultation with the facilitator of the

experimental group who believed beyond any doubt that the learner had the necessary skills to be trained for taking the role as interpreter. He was trained by the researcher to translate word-for-word and not to interpret any answers.

The researcher taped all the interviews. The questions were asked in English by the researcher. The interpreter put them to the learners in the mother tongue. The answers of learners were then translated by the interpreter from the mother tongue into English. The researcher probed until the answers were saturated and all uncertainties about what the learners meant were cleared. It proved to be a lengthy process, but in the end the researcher was confident that she had gained a clear understanding of each learner's responses.

The fact that the interpreter was not someone from outside the group ensured that the interviewing took place in a relaxed atmosphere.

c *Data analysis and Interpretation*

The methods of data analysis have already been mentioned briefly, but will be discussed in detail under Qualitative Research: Data analysis and interpretation. The information that was gathered during the phase of evaluation of Cycle 1, led to the next phase where the researcher planned the necessary interventions.

6.5.2.3 Planning (Cycle 1)

i *Introduction*

The information that was obtained during the observation and evaluation stages indicated that most of the learners could not read in English. Their understanding of the English language was in many cases limited to an understanding of “yes” and “no”. The researcher had the formidable task of developing a programme that would not only enable the experimental group to become functionally literate in English (which means that as far as reading is concerned, they would be able to read and understand basic everyday English such as material in a magazine) but

also to maximise their human potential as a whole. This was a huge goal for learners who did not understand the language.

Before the planning of an intervention programme could take place it was necessary to undertake a literature study in order to have more clarity about the problem and ways to solve it.

ii *Undertaking a literature study*

According to De Vos (1998:65) it is very important to undertake a literature study when planning a research project. The literature study that was undertaken is described very briefly with the purpose of pointing out its outcomes, which are consistent with the functions of a literature study as described by Fouché and De Vos (1998:65).

The process of studying previous research revealed that paired reading was an accepted strategy to improve reading and it was realised that paired reading could be used as an intervention strategy for learners in special education or in inclusive settings. It was realised that reading interventions had to include bottom-up and top-down approaches. Paired reading could - if implemented cooperatively - be a means to obtain cooperative and mega life skills. A phonics programme alone for example, would not have much impact. A revision of the latest research on reading interventions indicated what directions would have to be followed to prepare intervention strategies later in the research process.

- The literature study provided better insight into the complexity of the problem. The needs, experiences and frustrations of learners with limited English proficiency as well as the necessary components within a teaching programme were realised. A better understanding of the different intellectual traditions when it comes to teaching and learning English as a second or foreign language was necessary to place the problem within the correct context.

When views in the literature about similar problems were better understood, the intervention programme itself could be planned. As the contents of the programme have already been described in Chapter five, a few important aspects about the intervention programme will be highlighted below.

iii *Planning the cooperative paired reading programme and materials*

It was already mentioned that the school that the learners attended was using a literacy programme that mainly focused on bottom-up strategies, such as phonics and look-and-say methods to teach reading. As indicated previously the latest literature suggested that for teaching or improving reading skills, both bottom-up and top-down strategies have to be incorporated in a reading programme. It was therefore necessary to plan intervention strategies that accommodated both approaches. Consequently it was decided that the experimental group would be exposed to a programme which accommodated both approaches. The specific approach that would be followed was cooperative paired reading, consisting of 3 phases: pre-reading, paired reading/reading together and reading alone. These phases have been discussed in detail in the previous chapter. A characteristic of paired reading which can be a very successful vehicle for bringing about metalearning is noteworthy. Metalearning strategies such as planning, executing, monitoring and evaluating a person's own learning, can be enhanced through paired reading. Sharing constructed meaning with the self and others has an important place. The responsibility that the reader has for his own reading and to control his own reading should also be emphasised. According to the literature the materials that are used to enhance reading skills should incorporate the specific culture as far as possible (unless the aim is to learn about other cultures). The world that is described by the reading material should therefore easily be linked to the worlds of the learners. A problem that faced the researcher was where to obtain such materials. On the grounds of motivations, which have already been discussed, it was decided that magazines would meet the needs of the required materials.

After studying a survey of the most popular magazines in the Northern Province and the age group as well as the culture(s) of the people who read the magazines, (See Appendix B:1,7,20,21) it was decided that DRUM would be used for the project. A Non-Governmental Organisation agreed to provide twenty magazines of the same issue per week. This enabled the facilitator, researcher and learners to have the same magazines on a weekly basis. The facilitator of the experimental group had to be trained in the proper use of the magazines. The training of the facilitator is an important aspect that is discussed under the next phase of implementation, as the training was implemented by the researcher.

6.5.2.4 Implementation

i Facilitator training, monitoring and support

As the facilitator was the person through whom the intended programme would be implemented, thorough training, continuous monitoring and support were of the utmost importance. The following aspects will be described within the context of facilitator training:

- a Aims of implementing the programme.
- b Training of the facilitator in the basics of cooperative learning, metalearning, maximising human potential and how it relates to reading.
- c Training to understand the concept of reading and approaches to teach reading.
- d Training in the use of paired reading.
- e Training to empower the facilitator to train the tutors. The selection of learning tasks and reading material as well as time factors.
- f Assessment:
 - 1 Formative assessment.
 - 1a The facilitator's diary.
 - 1b The observational instrument.
 - 1c Interviews with facilitators.
 - 1d Evaluating learning tasks during paired reading.

- 2 Summative assessment.
- 2a Conducting post-tests.
- 2b Interviews with learners of the experimental and control groups.
- g The role of the researcher.
- h An overview of the practical implementation of the cooperative paired reading programme with DRUM and the programme of Joubert and Kaderli (1995)
- a *Aims of implementing the programme*

The facilitator of the experimental group was informed about the overall aim of the programme, which was to maximise human potential. The process of maximising human potential was explained to the facilitator. The process involves creating appropriate learning tasks through which metalearning can take place. Mega life skills and cooperative life skills can be obtained as a result of metalearning. During the process the aim would also be to improve the reading skills of learners, as reading is the means through which the learning tasks will confront the learners.

- b *Training of the basics regarding cooperative learning, metalearning, maximising human potential and how it relates to reading*

As far as cooperative learning is concerned, it was important that the facilitator knew how to divide the learners into groups and what is required for cooperative learning to be successful. The teacher also had to have sound knowledge of the process of the acquiring of cooperative life skills, that is the consequence of cooperative learning. The process of metalearning also had to be understood. The similarities between the phases in metalearning: planning, executing, monitoring and evaluation and the process of reading, where the reader plans to use certain strategies to read the text, executes the strategies, monitors the process and evaluates if what has been read makes sense had to be realised. The mega life skills were also explained. It was also explained that metalearning and cooperative learning, if successful can lead to the acquiring of mega and cooperative life skills, which are indicators of maximised human potential – a process that can in practise

be described as achieving growth in the realisation of human potential. Learning tasks in reading should therefore make provision for the process of metalearning and cooperative learning to take place.

c *Training to understand the concept of reading and approaches to teach reading*

It was stressed that persons who intend to assist learners with reading should have a clear understanding of what reading is. The 19 essential elements of reading were explained and it was pointed out that these should always be kept in mind when assisting readers. In the second place it was indicated that knowledge about different approaches to teach reading are also necessary, as it forms part of a vast repertoire of strategies that a teacher needs when assisting readers. The reader's problem will determine to a great extent what type of approach will be needed, for example, a learner who needs to learn the phonetic system of English and who cannot read at all will need to be assisted with phonics (a bottom-up approach). When the readers can already read words, top-down approaches that place more emphasis on the role of the context can be introduced.

d *Training in the use of paired reading*

It was explained that paired reading is an approach that can accommodate cooperative learning and metalearning and that it can therefore be used to achieve growth in the realisation of the human potential of learners. The concept of paired reading was explained and variations thereof, such as Repeated Choral Reading for a large group of learners, were discussed. It was explained that the paired reading approach of Young and Tyre (1983) would be used and a few of its strengths were pointed out. It was stressed that this method was very simple and that it would not be difficult to introduce it in the class. The three main phases of paired reading (pre- reading, reading together and reading alone) was demonstrated by the researcher, using materials that were found in the classroom. It was pointed out that although paired reading has three main phases, certain researchers suggested that under each phase specific aspects can be concentrated on, depending on the

reader's needs. An example is the following: At the pre- reading phase the facilitator can pause for a while to facilitate an understanding of certain difficult concepts and words. Dictionary skills can be developed at this stage and learners can be asked to describe personal experiences that are related to the concept or word.

At the phase of reading together, it was also explained that the facilitator could select certain listed aspects in the programme to focus on during this phase. It will however depend on the needs of the learners. The phase of reading alone was indicated to be the last phase that is rather simple.

e *Training to empower the facilitator to train the tutors*

The facilitator was trained to select tutors for paired reading in each group. At the beginning of the project there were 16 learners in the experimental group. For cooperative learning to be successful, groups of between four and six learners has been recommended by the literature. Two groups of six learners and one group of four learners could be formed. Three tutors would be needed. The facilitator could be the tutor of one group and could rotate with the other two tutors. It was explained that the tutors would have to be more proficient than their peers. The results of the literacy test could be used as a guideline. The facilitator was asked to train the tutors in the use of the three basic phases of paired reading (pre- reading, reading together and reading alone). They would not have to focus on any other aspects of paired reading unless specifically instructed by the facilitator.

The tutors would have to be monitored continuously to make sure that the process was followed correctly. Certain basics regarding the behaviour of the tutors were explained, such as never laughing at mistakes being made and continuously encouraging the participants. It was also suggested that learners sometimes work in pairs, depending on the specific learning task.

f *The selection of learning tasks and materials, as well as time factors*

It was explained that paired reading would take place for at least fifteen minutes per day. The project would last for nine months. The cooperative paired reading

programme had to be implemented with the programme of Joubert and Kaderli (1995), as this was the curriculum followed by the school. It was explained that the facilitator had to select reading material from DRUM on a daily basis. The material had to address the same topic as the specific part of Joubert and Kaderli (1995) that the class would be doing at a specific time. An example is the part of Joubert and Kaderli that deals with numbers. Material from DRUM that addresses numbers in any way would then have to be selected for paired reading. The facilitator would then also have to select learning tasks for each group. Each group would perform the three phases of paired reading, keeping the learning task in mind. One group with a low proficiency level in reading could for example encircle all the numbers on a specific page. The answers to specific problems of learning tasks would then be shared in each group.

In order to differentiate, the learners who had advanced to such a level that they could read independently (at the beginning of the year it was only the tutors) could then work in a group of two and follow the process of paired reading. The outcomes based learning tasks that had been developed by the researcher could then be done by them. Once again they could discuss finding a solution to the problem, which would give an opportunity for metalearning and cooperative learning to take place. The facilitator was assured that she would receive one copy of the same issue of DRUM per week. This would eliminate the duplication of reading materials.

If the facilitator experienced any uncertainties about the procedure to be followed, she could refer to the written documents that were supplied to her by the researcher or could consult the researcher.

The facilitator of the experimental group was informed that observational and supportive visits would take place weekly to monitor the whole process and provide support. The procedures for assessing the learners also needed clear explanations.

g *Assessment*

The assessment of the whole process and the learners was explained to the facilitator of the experimental group. The facilitator of the control group was informed that a post-test would be conducted with both groups at the end of the year and that she would also be required to evaluate the process in her classroom, as well as the learners.

Assessment would consist of two forms: Formative assessment and summative assessment.

1 *Formative assessment*

1a The facilitator's diary

The facilitator of the experimental group was trained to record her experiences and observations of noteworthy aspects related to the learning process. Aspects that indicated that the overall aim of the interventions, which was to maximise human potential, was being addressed should also be noted. Incidental learning that took place and through which cooperative and mega life skills could implicitly be addressed, should also be recorded. Information that was come across in the magazines or learners' everyday experiences could lead to incidental learning.

1b The observational instrument

The facilitators of the experimental and control groups were both trained to observe whether metalearning was taking place or not. For the purpose of such observations the researcher developed an observational instrument, (See Appendix C:1-26) which would measure mega and cooperative life skills. The instrument was designed in the form of a checklist, with spaces where the facilitators could fill in their observations. The instrument was also designed to measure improvement or stagnation as far as reading is concerned. Examples of how the observational instrument was implemented can be found in the discussion of the Qualitative Research: Data analysis and interpretation.

In consultation with the facilitators it was decided that at least one recorded evaluation per learner per term would be sufficient to provide information about each learner's progress. Although one conclusive observation per learner per term would be given, learners had to be observed on a daily basis.

1c Interviews with facilitators

Unstructured interviews would be conducted with the facilitators of both groups, once per term in order to gain an understanding of how the facilitator experienced the specific programme she was facilitating, the effect that it had on the learners, and their progress in general. An account of the facilitator interviews is given in the section: Qualitative Research: Data analysis and interpretation.

1d Learning tasks during paired reading (Outcomes based paired reading learning tasks)

Specific tasks for the learners to complete were designed by the researcher. These learning tasks were designed to capture the learners' interest and to compel them to take responsibility for their own learning. Various strategies could be applied to solve each problem, for example looking for numbers in the text, studying a diagram or picture or reading the passage attentively. In order to solve the problem, a strategy for finding the answers where reading was inevitably involved had to be planned. The specific strategy had to be executed, monitored and the outcome had to be evaluated.

Although each step would not explicitly be concentrated on, metalearning would take place. The activities were designed according to the paradigm of Outcomes Based Education. The materials that were used were DRUM and TRUE LOVE magazines (issues during 1998) TRUE LOVE was only used during the first week. Thereafter the Non-Governmental Organisation only provided DRUM. DRUM was in fact found to serve the purposes of the project far better, than TRUE LOVE, as the latter was more suited for adults. (The Outcomes Based paired reading learning tasks were introduced in Chapter five). With an understanding of

the components of formative assessment, the process of summative assessment will be discussed next.

2 *Summative assessment*

2a Conducting post-tests

The researcher would conduct the summative assessment, which consisted of the test of Basic Literacy in English and the One Minute Reading Test in English. These tests were used as post-tests. The testing procedure has already been discussed in a previous section and more detail about test results are discussed in the section about Data analysis and interpretation.

2b Interviews with learners of the experimental and control groups

The interviews with six learners of the experimental and control groups as described would be repeated at the end of the year to determine whether mega and cooperative life skills had been obtained which would indicate that growth in the realisation of human potential had been achieved.

2g The role of the researcher

The researcher's role was the role of participant-as-observer. The researcher would conduct the pre- and post-tests, interviews with learners and interviews with facilitators. The implementation of the programmes in both groups would be monitored by the researcher through periodic unannounced visits and interviews with the facilitators, periodically studying the facilitator's diary and by studying information of the observational checklists filled in by the facilitators. The researcher aimed at continuously being in touch with the heartbeat of each classroom. The researcher would also support both facilitators morally and with questions about the implementation of both programmes without obstructing the flow of the research. The facilitator of the experimental group would receive the following support from the researcher:

- Supply learning materials – providing observational instruments and guidance to implement them.
- Supplying the reading programme and training.
- Supplying learning tasks, outcomes and assessment criteria and providing training to the facilitator to perform these activities in consultation with the researcher.
- Guidance as far as writing the diary is concerned.

The next aspect that should be discussed is the implementation of the cooperative paired reading model. It should be realised that the implementation of the programme had two phases in the action research process. The first phase mainly consisted of the implementation of paired reading according to the model that was set out in the previous chapter. The programme of Joubert and Kaderli (1995) was also integrated and DRUM was mainly used as material. The outcomes based learning tasks (as presented in chapter five) that had been developed by the researcher were introduced as learning tasks and as the facilitator had found that it was too difficult for the learners, the focus of the programme had to shift to the development of phonics and easier learning tasks during paired reading. In the second cycle of the action research the programme was followed as such. This phase is explained briefly in the discussion of cycle two of the action research. With a broad understanding of how the programme was introduced, it will be necessary to describe more practical aspects that happened in the classroom, as the facilitator was implementing the programme. In the next paragraphs the implementation of the programme is discussed as a whole and a distinction is not made between the two phases of action research where the programme was implemented, as the reader has already been briefed about this issue.

- 2h An overview of the practical implementation of the cooperative paired reading programme with DRUM and the programme of Joubert and Kaderli (1995)

After the facilitator training had taken place, the facilitator divided the class into groups. During numerous visits to the classroom, it was noted that the groups were not static. Sometimes the learners were working in groups of four to six and at other times they were working in pairs. Especially at the beginning of the year

when most of the learners still had to learn phonics, the smaller groups worked better. At first echo reading was used frequently, where she did the pre-reading and the learners followed as a group and reading together where the whole class responded. Thereafter, at the reading alone phase each learner in a group of two had an opportunity to read the part alone. More advanced learners were doing other more complicated learning tasks, such as the Outcomes Based learning tasks. In general, at the start of the project the learners were still struggling with foundation skills such as the following:

- The correct orientation of a book or magazine.
- Turning pages from the front to the back, knowing that the left hand page is read before the right hand page.
- Correspondence of finger movement.
- Identifying the first and last part of the story.
- Identifying the heading of the story or article.

This information that was supplied by the facilitator of the experimental group during an interview has been documented elsewhere. The cooperative paired reading programme was introduced with DRUM and the programme of Joubert and Kaderli (1995) in the following way:

In the first place the programme of Joubert and Kaderli (1995) had to be followed as it formed part of the school curriculum. This programme, as already indicated, mostly consisted of phonics, learning new words and completing sentences. In order to place the contents of the programme in a specific context, materials of DRUM were selected by the facilitator. The facilitator looked for material in DRUM that addressed the same topic as the specific topic in Joubert and Kaderli (1995) that was introduced on a specific day. The material of DRUM was used for paired reading. During paired reading (pre-reading, reading together and reading alone) the learners had to perform specific learning tasks that were selected by the facilitator. The facilitator had a list of important aspects that could be concentrated on during each phase of paired reading and compiled specific learning tasks to address these issues. The researcher monitored the facilitator.

The learning tasks were then communicated to the class and tutors. The groups were monitored by the facilitator.

At first the process of paired reading went very slowly, as the learners still had to learn to read. The facilitator introduced certain Outcomes Based learning tasks that were found to be too difficult for most of the learners. Only the more proficient learners could perform the tasks - that seemed to be a successful way of differentiation. It was decided that the focus would be on phonics, but that paired reading would continue. In this way a bottom- up approach to teach reading was combined with a top- down approach – as recommended by the literature.

After a while the learners had learnt the basic sounds in English and were able to read short words. The facilitator observed that when the learners were reading silently, different sounds could be heard, as they were busy articulating the different sounds in the words.

As the year progressed the programme of Joubert and Kaderli (1995) was still used together with paired reading and material from DRUM, but as the learners' reading improved, more difficult learning tasks were introduced.

An example of how the facilitator used paired reading with DRUM is explained in the next paragraphs. An example of a learning task introduced by the facilitator is presented thereafter.

The paired reading technique of Young and Tyre (1983) illustrated through the use of DRUM:

Material: DRUM (1998:84-85). 16 July issue (See Appendix A:95-96).

- The tutor (who can be another learner or the facilitator) firstly reads the passage and discusses it with the tutee/s. Illustrations, relevant concepts and the tutees' own experiences form part of the discussion. The colourful illustration, where the boy pours tomato sauce over his hamburger is discussed, pointing out the type of tomato sauce, how much is in the bottle, what it is made of and so forth.
- It is indicated where one starts to read and it is indicated that the part that is normally printed in the largest letters is the heading.

- Important words and concepts are clarified. Dictionary skills are developed through the use of dictionaries to reach an understanding of the following words: cancer, cardiac disease, antioxidants, arthritis, blood samples, imitations, preservatives and fattening.
- The tutor reads part of the article naturally and with feeling, and points with his finger while the tutee/s look and listen.
- During the next step the tutor and tutee/s read the part aloud.
- The part is read together for a second time, but the tutor keeps quiet now and then and gives the tutee/s an opportunity to read words and sentences alone. Parts of the passage have been selected in such a way that the tutees experience success. More fluent readers read whole sentences alone and receive help where they hesitate.
- Words are used to play, for example, the learners search for words that start or end with specific letters.
- Words of a specific lesson in Joubert and Kaderli (1995:2) that the class had already done are searched for in the story, for example, a word ending on 'sh' (fresh), a word starting with 'wh' (while). The purpose of this task is to indicate differences in word patterns.
- The tutees are continuously encouraged and praised. They receive recognition for words and sentences that were read correctly, for participation and progress made. Confrontation is avoided at all costs. The process is made enjoyable. Help is provided before the tutee/s become anxious. The process is characterised by a little bit on a regular basis, rather than a lot now and then.

An example of a learning task with a higher level of difficulty that was introduced by the facilitator of the experimental group after paired reading had taken place is presented below. Outcomes Based Education has also been integrated in the learning task. The learning task has already been presented in Chapter five, but for clarity it should be viewed again. Table 6.3 gives an example of a learning task for learners with a higher competency level in reading.

TABLE 6.3 An example of a learning task for learners with a higher competency level in reading

LEARNING AREA: MATHEMATICAL LITERACY, MATHEMATICS AND MATHEMATICAL SCIENCES

PHASE ORGANISER: ENVIRONMENT PROGRAMME ORGANISER: FOLLOWING A RECIPE TRUE LOVE (1998:112-115) FEB ISSUE

SPECIFIC OUTCOME NO 3: DEMONSTRATE AN UNDERSTANDING OF THE HISTORICAL DEVELOPMENT OF MATHEMATICS IN VARIOUS SOCIAL AND CULTURAL CONTEXTS (Western)

Mathematics is a human activity. All peoples of the world contributed to the development of mathematics. The view that mathematics is a European product must be challenged. Learners must be able to understand the historical background of their communities' use of mathematics.

SPECIAL OUTCOME NO 5: MEASURE WITH COMPETENCE AND CONFIDENCE IN A VARIETY OF CONTEXTS.

Measurement on Mathematics is a skill for universal communication. People measure physical attributes, estimate and develop familiarity with time.

The aim is to familiarise learners with appropriate skills of measurement, relevant units used, and issues of accuracy.

ASSESSMENT CRITERIA	RANGE STATEMENT	PERFORMANCE INDICATORS	ASSESSMENT ACTIVITIES	DATES
<p>SO 3: 1. Evidence that mathematics is understood as a human activity</p> <p>SO 5: 1. Evidence of knowledge of the importance of measurements</p>	<p>1.1 Demonstrate counting and measurement of everyday life.</p> <p>1.1 Show knowledge of measurement from experience</p>	<ul style="list-style-type: none"> ▪ Give examples of counting and measuring at home <ol style="list-style-type: none"> 1. Describe situations in which measurement is used at home 2. Give examples of measured goods from shops 3. Measure different objects by comparison 4. Show knowledge of the approximate sizes of ml, l, tsp, tbs, ½ a cup, 1 cup, g 5. Measure with SI units 	<ul style="list-style-type: none"> • Measuring ingredients for cooking • Comparing of results of different units <p>Activity 1: How many cups, tablespoons or teaspoons are the following? 2 ml (= ½ tsp) teaspoon; 62,5 ml (=¼ cup); 5 ml (= 1tsp) teaspoon; 125 ml (= ½ cup) 15 ml (= 1tbs) tablespoon; 250 ml (= 1 cup)</p> <p>Activity 2:</p> <ol style="list-style-type: none"> 1. How much sugar do you need for the following recipes? <ul style="list-style-type: none"> • Valentine's chocolate cake • Chocolate treats • Brownies • Rich chocolate loaf • Tiramisu cream pie • Salmon and broccoli tart • Spicy curry triangles with lemon chutney dip 2. How many eggs would you need in each case? 3. Which recipe would you think is the easiest and why? (Learners should realise that it is not necessarily the recipe with most ingredients which is the easiest.) 4. Name three recipes requiring the use of an oven. How hot must the oven be? 5. How to make the icing of the Valentine's Deluxe Chocolate Cake? <p>Learners work in groups of 4. All activities include listening, speaking, reading and writing. (Note to the teacher: Place measuring spoons on a table. Let learners explore on their own what and how much each instrument measures. They can measure sand, for example.)</p>	

With a better understanding of how the facilitator practically implemented the programme, the observation after the implementation of the programme in the first cycle of the action research is discussed next.

6.5.2.5 Observation

After the cooperative paired reading programme including the Outcomes Based learning tasks had been implemented the process was closely monitored by the facilitator of the experimental group and the researcher. The facilitator reported that the learners were not able to cope with the demands of the Outcomes Based paired reading learning tasks that had been designed by the researcher. The learners were still experiencing difficulties to read on their own. The facilitator was of the opinion that the learners should be given more time to become more proficient in their reading, before embarking on the Outcomes Based learning tasks. It seemed necessary to modify the programme at that stage. It was important to review the programme again and plan strategies to overcome the problem. The next phase of action research, which became necessary, was planning and would be the first phase of Cycle 2. Cycle 2 will be discussed next.

6.5.3 Cycle 2 of Action Research

6.5.3.1 Planning

The problem that was observed as pointed out above, was that the learners were not yet proficient enough in reading to solve the problems of the Outcomes Based paired reading learning tasks. It seemed as if these learning tasks had been introduced prematurely. The researcher in consultation with the facilitator decided to postpone the Outcomes Based paired reading learning tasks until the learners' reading had improved to such an extent that they could try to solve the problems of the learning tasks. The rest of the procedures would continue as planned. The facilitator of the experimental group would still follow the cooperative paired reading procedure with the learners for at least fifteen minutes per day, while also spending time to do the activities in the programme of Joubert and Kaderli (1995).

The control group would also still follow the programme of Joubert and Kaderli (1995).

6.5.3.2 *Implementation*

The modified programme was implemented as planned. The only change was that the Outcomes Based paired reading learning tasks were postponed for the weak learners until these learners were better equipped to do the reading that was required to solve the problems. The duration of the implementation phase was about nine months.

6.5.3.3 *Observation*

The facilitator of the experimental group seemed to be more relaxed. After some time the learners were slowly but surely beginning to read words and sentences on their own. The facilitator continued to observe the learners on a daily basis as far as cooperative and mega life skills are concerned and proficiency in reading in general. Remarkable changes in the learners were noted by the facilitator. They became more open. Even the shyest little girl went to read to the principal (she scored six marks out of fifty one for the Literacy test at the beginning of the year). At first her reading speed was below the lowest mark on the One Minute Reading test, which was below 7 years and 5 months). Other learners had developed into leaders. They were starting to take initiative and own responsibility for their own learning. The facilitator's diary, interviews with her, as well as the observational instrument, support these statements and are examples of cooperative and mega life skills that had been obtained, implying that the learners had achieved growth in the realisation of their potential. A more detailed discussion of the findings is dealt with in the next section. It should however be mentioned also that the control group which was mainly following rote learning did not show the same changes that the experimental group experienced. Until the end of the project the facilitator of the control group reported that it was difficult to complete the cooperative and mega life skills checklist, as she did not know the learners. It is understandable because learners did not have the opportunity to be compelled by

learning tasks (which involved reading) to find answers to real life problems and to share the constructed meaning with themselves. Constructed meanings were also not shared with others and therefore the learners did not really get to know themselves or the other learners or the facilitator. In the experimental group the magazines that contained the compelling real life problems were the doorway through which the learners entered in order to be changed, as they shared meaning with themselves and others.

6.5.3.4 *Evaluation*

The step of evaluation implied that all learners would be subjected to a quantitative evaluation, which was the post-test (Test of Basic Literacy in English and the One Minute Reading Test). The scores of these two tests were compared with the scores at the beginning of the year. The researcher also wanted to determine if the Cooperative Paired Reading Programme produced better results than only the programme of Joubert and Kaderli (1995).

As far as qualitative evaluation is concerned, all the information that was obtained in a formative way, such as the observation instrument (observing cooperative and mega life skills), interviews with learners (pre- and post-), interviews with facilitators and the facilitator's diary, was gathered with the aim of scrutinising it to determine whether growth had been achieved by the learners in the realisation of their potential and whether the cooperative paired reading interventions or the programme of Joubert and Kaderli (1995) were responsible for it. Comparisons of evaluations of the control and experimental groups would therefore be necessary. The data that were obtained qualitatively and quantitatively will be presented in the next section. The qualitative data will be discussed first. The data that were obtained quantitatively will be discussed thereafter.

6.6 **DISCUSSION OF DATA**

The data will be discussed under the following headings:

Qualitative Research: Data analysis and interpretation

Quantitative Research: Data analysis and interpretation

6.6.1 Qualitative Research: Data analysis and interpretation

As already mentioned, different techniques of data collection were used (quantitative and qualitative), to gain a better understanding of the phenomenon that was being studied. Through the process of triangulation various methods of data collection were used to increase the reliability of observation.

The different qualitative methods of data collection that were used are briefly listed for the purposes of describing the data analysis. These methods were the following:

- The observational instrument: mega and cooperative life skills (experimental and control groups)
- Interviews with learners (experimental and control groups)
- Interviews with facilitators (experimental and control groups)
- The facilitator's diary (experimental group)

The data analysis and interpretation of each of the above methods of data collection will be discussed in the next section.

6.6.1.1 Data analysis and interpretation: Observational instrument

The specific method that was used for the data analysis and interpretation will be discussed first. Thereafter, the observations of the facilitators regarding six learners will be presented, followed by the interpretations thereof by the researcher.

i *Method of data analysis: Observational instrument*

For the purpose of data analysis of the qualitative research (Observational Checklists: mega and cooperative life skills) the approach of Huberman and Miles (1994) as described by Poggempoel (1998:340) was used as a guideline. The Huberman and Miles approach (1994) indicates three linked sub-processes of data

analysis, which are data reduction, data display and conclusion drawing or verification. The processes take place before data collection, during research design and planning as well as during data collection and after data collection. For the purposes of this study the first two processes, data reduction and data display are discussed together because they are so intertwined. The last processes, conclusion drawing and verification, are discussed separately. It needs to be pointed out that these processes were not identical to those suggested by Huberman and Miles (1994) due to the uniqueness of this specific qualitative research project. As already indicated, the processes were used as a guideline.

a *Data reduction and data display*

The different categories in which each of the observations fall, had already been designed during the planning phase (Cycle 1) of the action research. It was designed in such a way that the facilitator was forced to supply a reduced and compact form of data, which was written under the heading: contents/observations. The limited space ensured that only the most important and significant observations would be written down. Concerning data display the data were written down and organised under specific pre-determined headings (11 mega life skills and six cooperative life skills), to enable the researcher to compare the data of the different periods (four school terms) in order to determine improvements and draw conclusions.

b *Conclusion drawing and verification*

The process of conclusion drawing was still intertwined with the process of data reduction and involved the following: After having read through the data, for example self-confidence, which is the first mega life skill, the researcher had a clear idea of the essence of the data (data reduction). The theory of metalearning and maximising human potential was continually kept in mind. The relation of the essence of the data to the theory was determined and lastly it was determined whether the essence of the data indicated that metalearning had taken place and whether the essence of the data had contributed in any way to the overall aim of

the research project, which was to achieve growth in the realisation of human potential. The method of triangulation was used for verification. For this purpose quantitative research results were also scrutinised to determine whether growth in the realisation of human potential (in the form of improvements in reading) had been achieved.

Other forms of data, such as interviews with learners and with facilitators served the same purpose. The facilitator's diary also provided valuable information in this regard.

The data obtained by the observational instrument will be discussed in more detail in the paragraphs that follow. For this purpose the observations of six learners for the whole year (four school terms) were selected. One learner from the experimental group and one learner from the control group were selected on the basis of the following requirements.

- The learner who made the best progress, according to the literacy test scores, compared to the test score in the beginning of the year.
- The learner who showed average progress according to the literacy test.
- The learner who made no progress when comparing the test scores of the literacy test at the beginning of the year with the score at the end of the year.

The total sets of data that have been selected on this basis are six sets of observational data for six learners. Three learners were from the experimental group and three learners from the control group.

By selecting these specific learners' data, the researcher attempted to provide a detailed unbiased account of the progress in each classroom. The data as observed by the facilitator will be presented in the next paragraphs, followed by the researcher's interpretations.

Data are interpreted under two headings: mega life skills and cooperative life skills with reference to the sub-headings.

6.6.1.2 Presentation of data and interpretations

The data of the two learners with the best progress according to the Literacy test are discussed first. The first learner is from the control group and the second is from the experimental group.

The second set of data involves two learners with average progress according to the Literacy test – one learner from the control group and one from the experimental group.

The third set of data provides the data and interpretations of two learners who made no progress according to the Literacy test. One learner is from the control group and the other is from the experimental group. It should be kept in mind, as already mentioned, that the data are interpreted according to specific mega and cooperative life skills, which are indicators of growth in the realisation of human potential. The interpretation of the data has therefore focused on these skills. As the specific learners in the control group were reported to have acquired fewer skills than the learners in the experimental group, the interpretations of the data from the control group are less positive than the data from the experimental group. It should however be realised that both groups showed progress, but that more significant progress was made in the experimental group. In the second place it should be kept in mind that the quantitative data that is presented later also report progress in both groups.

The observational checklists for each learner can be found in the appendix of this manuscript.

i a *Observed mega and cooperative life skills of a learner in the control group who showed the best progress*

The data can be found Appendix C:1-3.

b *Interpretation of observed mega and cooperative life skills*

1 Mega life skills

As far as self-confidence is concerned, the learner was at first observed to be quiet, but more spontaneous now and then. She was observed to be self-confident in the class situation. At the end of the year the learner's self-confidence was said to have improved a lot. The facilitator reported that learner felt able to do the learning tasks and felt in control from the beginning.

The learner was observed to be motivated and to show interest. She was said to do good work and that she achieved a lot. As the learning tasks that learners did in the control group mainly consisted of instructions, which they had to complete by filling in letters, words or sentences in a workbook, the learner was mostly challenged to complete stimulus-response tasks. Because of the non-compelling nature of the learning tasks there was not much interaction between the learner and others. The result was that there was a lack of opportunity to acquire of mega- and cooperative life skills.

The learner's effort seems to be the same as at the beginning of the year. The facilitator observed: *She does her best to do good work.* There is no indication that the learner wanted to improve on her best through continuous correction, adjustment and modification. The learner did not seem to have wanted to work harder to achieve greater reward.

The learner's level of perseverance seems to have stayed the same. It is described in terms of *always doing and completing her work.*

As far as common sense is concerned, it appears that there was an improvement. At first the learner only followed instructions, but later she was able to make choices and told the facilitator when she disagreed with something. Unfortunately the learning tasks would not allow much room for exercising this competency.

The learner had shown responsibility for completing tasks since the beginning of the year. She was also observed to show interest. At the end of the year she showed responsibility to complete tasks according to the best of her abilities. It seemed as if her sense of responsibility had improved, but at the end of the year she was described as taking chances and always wanting to talk. It seems that the learning tasks did not compel the learner enough with the result that her attention was easily drawn to other matters.

The learner was also observed to be independent in terms of doing good work and realising that she was responsible for her future. It did not change much during the year.

At first the facilitator found it difficult to determine peacefulness but later it was observed that the learner would feel self-content after having completed learning tasks successfully.

The facilitator could not determine whether the learner experienced joy when completing a learning task. It is possible that the learning tasks were not challenging enough.

As far as love and caring ultimately for herself and everything around her are concerned, it was observed that the learner cared about what was going on around her, but that it had to be *developed in the right direction*, implying that the learner could still improve with regard to having compassion for those around her. It seems as if the learning tasks were not challenging enough to meet this need.

2 Cooperative life skills

Regarding the learner's perception of other learners, the facilitator observed that she did not depend on others to achieve her goals, but that she would laugh at others when they made mistakes. This indicates that the learner did not accept others as fellow individuals who share strengths and weaknesses. At first the facilitator could not determine whether there was purposeful communication between the learner and others. Later the facilitator observed that her work was

important to her and that she helped others, but also took chances. It has already been mentioned that the learner tended to laugh when others made mistakes, therefore it seems as if the interaction between the learner and others did not manifest in recognising others as human beings, respecting others correspondingly and appreciating what can be shared through listening while all share information. It took the facilitator almost a year to determine how the learner dealt with feelings, due to a lack of sufficient interaction in groups and with the facilitator. By the end of the year the learner was observed to tend to act negatively at times, to be angered by her peers, but to forget about it quickly. If one considers that she was taking the lead at times, the example set to the other learners was not a very good one. In order to improve it would probably be necessary for the learner to be exposed to more cooperative learning situations.

The learner was observed to be obedient, as far as justice and forgiveness are concerned, but other observations of the facilitator imply the opposite. It was also observed that the learner wanted to take the lead in class but did not know how. It could be that the learning tasks were too rigid to meet this need.

As far as love for others and caring ultimately for others are concerned, the facilitator only observed that she did care for others but could not say how. If the learner had been more involved in the realisation of her own potential, she would have recognised the potential in others and would deliberately have wanted to show that she cared by recognising them for whom they needed to become and by doing something about it.

The facilitator noticed that the learner had leadership abilities, but it is quite disappointing to read the last observation of the year: *She definitely has leadership abilities but needs guidance.* The learning tasks were supposed to provide the necessary guidance, but did not.

The only conclusions that can be made about the question as to whether the learner had shown growth in the realisation of her potential are the following:

The learner did acquire some of the mega- and cooperative life skills and can indeed be credited for it - considering the nature of the learning tasks, but her progress could have been better. She did therefore show some growth in the realisation of her potential, but it was not as much as one might expect. One would really have expected more from this learner, who turned out to be the learner who showed best progress in the control group and who was one of the strongest learners.

Something was anomalous here. In this case as with the other learners in the control group, reasons for the slow progress can possibly be attributed to having something to do with the materials and teaching according to a stimulus response process where the facilitator gave the learners information and the learning tasks were mostly limited to the filling in of words in empty spaces. The teaching in the control group was mainly aimed at “teaching” phonics and other skills to the learners, but it was not applied in real life +learning tasks. In the experimental group the facilitation was constantly aimed at individuals as persons in order to confront them with real life learning tasks.

ii a *Observed mega and cooperative life skills of a learner in the experimental group who showed the best progress*

The data can be found in Appendix C:4-8.

b *Interpretation of observed mega and cooperative life skills*

The learner who made the best progress in the experimental group was the weakest learner at the beginning of the year of both the experimental and control groups. The facilitator describes in one of the interviews how shy and scared this learner was at the beginning of the year, and being very timid, without being able to understand a word of English, her chances for showing improvement looked rather bleak, but what happened during the course of the year could be described as quite extraordinary. The learner had improved a lot as far as the skill of reading is concerned, but the non-academic benefits and changes in her as a person were even more remarkable as the observations of the facilitator will show.

1 Mega life skills

At the beginning of the year the learner did not have any self-confidence. She knew no English or Afrikaans and did not even speak when she was spoken to in Sotho. The following comments by the facilitator explain it: *Lacks confidence. Never speaks, not even when spoken to in Sotho.* By the third month she started looking up when spoken to. She started reading in English for the first time, but she was very shy. She was still very unsure of herself when she tried to read. During the seventh month the facilitator commented that *she seemed more in control of herself* and that she read *in a soft voice but with greater ease*. She was not so shy anymore. By the end of the ninth month it was commented that her reading had improved so much that *she eagerly agreed to go and read to the principal in his office*. From the above description it is clear that the learner had developed into feeling able to do the learning tasks. The fact that the learner felt in control improved her self-image and she was more and more willing to take risks. The learner did not become fully motivated in an instant. At first she *did not respond to any questioning*. She was very passive for quite some time. Then she slowly started to try and understand. There was a *slight improvement in wanting to cooperate*. Her willingness to cooperate improved and she started taking part in dialogue reading. Her motivation developed from the one extreme to the other extreme where she now *wants to read everything!*

It seems as if the learner had experienced success at a certain stage and then wanted to do more. She realised that she could control events and that she could learn more about herself. At first the learner did not show any initiative, as she didn't speak or move. It was not possible for the facilitator to determine her initiative. Later she showed more initiative by trying to hand out pencils and to give an answer or a word during paired reading. Later she would respond to questions more freely and cooperate better with others, paying a lot of attention. The learner started realising that others would not act on her behalf and that she would have to do more out of her own and on her own.

Initially the learner did not show any effort. She was so shy that she easily fell down on her arms and decided not to respond in the presence of other learners. She gave up easily. She started finishing learning tasks, but still lost interest in tasks that were too difficult. As far as reading is concerned, she has definitely put in more effort. Improving in reading requires continuous monitoring, correction and adjustment. It looks as if the learner had realised that by putting in more effort to achieve a greater reward.

The learner did not show much perseverance at first. In spite of the fact that she worked at a very slow pace and stayed behind most of the time, she later showed perseverance and tried to keep up with the class, but could not yet cope. She did however improve to a level where she became average in completing learning tasks. She was achieving a lot in reading. The learner realised after some time that she was in control.

In the beginning the facilitator could not observe any sign of common sense. The learner was very passive. She started showing more common sense as time went by. She would point at the water that the facilitator had spilt on the table. She started following with ease where the others read. She made a choice to do her homework regularly and appreciated the facilitator's positive comments when she had achieved a goal. On one occasion the learner observed that another learner was being dishonest during a test. She had a few options that she could follow, but made a choice that the best option would be to tell the facilitator, which she did. The facilitator thought that the learner had really improved as far as common sense is concerned.

At the start of the experiment the learner did not show much responsibility. She did not take responsibility to do her own learning. As she experienced more success she started taking responsibility for things around her such as noticing that the facilitator's coffee water was boiling and showing her. She realised that she had to participate in class and group work and that she herself was responsible to move on to a higher grade. She started participating without being shy.

Punctuality was also observed. It appears that the learner had exercised more self-discipline and self-control.

Initially the learner was totally dependent on others for help. As her reading improved she became less dependent on help. She tended to ask the learner who sat next to her to help in the beginning, but later she started to decide for herself what to do. Her independence was still improving by the end of the year.

The facilitator observed the learner as being *too peaceful*. Probably the facilitator confused “peaceful” with being passive, as the learner was very passive at the beginning. As the learner started realising that she could *accomplish success*, she felt *content* and *peaceful* in the words of the facilitator.

As far as joy, which flows from completing a challenging task is concerned, the facilitator reported that *she felt very happy after succeeding in a task*.

Concerning love - caring ultimately for myself and everything around me - the learner was at first observed to be very submissive. The facilitator observed that she started caring better for herself. The reason is most probably because she started feeling in control and started experiencing success – and not because she was staying in a hostel, as the facilitator guessed.

While regularly experiencing that she was growing in the realisation of her potential, the natural reaction would be to care for everything around her – which she did. The facilitator observed her to be very lovable towards others, meek and humble.

2 Cooperative life skills

Regarding the learner’s perception of others, she was at the start observed to be very passive and dependent on friendship with others. Her interaction with others was characterised by caring for others and being cared for. Although she received a lot of attention from her peers, as she was the youngest and smallest learner, she

stayed humble. Communication was initially very inadequate. The learner was observed to be very shy and quiet – not communicating but watching eagerly. She slowly began to communicate more and at the end of the year she communicated very well with others and shared information with them. Her improved communication manifested in recognising the others as human beings, respecting each individual accordingly and appreciating what they had learnt from each other through listening while sharing.

The facilitator could not observe incidences where the learner dealt with ill feelings that could be noticed externally, but internally some changes did take place. At first her reaction to feelings about unfamiliar people was not to respond to them. She slowly started to cope and adjust to circumstances (probably including unfamiliar people). As far as justice and forgiveness are concerned, from the beginning she was very submissive and tried to please others. She would not become angry with others. She was later observed to be honest, humble and obedient in class and that she would not act unjustly towards others. Honesty, humbleness and obedience were important contributors for cooperative learning to take place.

As far as love for others is concerned, the learner was observed to give as well as receive a lot of love and friendship. As she started realising that her potential was being maximised, and began caring more for herself, she also expressed caring and compassion for others.

Leadership is one cooperative life skill that has not improved much. The learner was observed to be a good follower – still at the end of the year. If one considers the fact that the learner was at first not cooperating with anyone – not even with herself and that she gained control of herself and cooperated well with others, leadership will definitely develop with time. The fact that she went, unprepared, to read to the principal in his office is an indication of her potential as a leader.

In answering the question of whether the learner achieved growth in the realisation of her potential, the above observations indicate that it was indeed the case. Apart

from having improved tremendously in reading, the learner as a person changed because of accepting the challenges of compelling learning tasks and completing them successfully. This is a good example of a learner who believed in herself (and her potential) and did something to achieve growth in the realisation of her potential. If one considers the mega life skills that had been obtained, as well as the cooperative life skills one cannot doubt that the learner has indeed shown growth in the realisation of her potential – a process that will possibly continue for the rest of her life.

iii a *Observed mega and cooperative life skills of a learner in the control group who made average progress*

The data can be found in Appendix C:9-11.

b *Interpretation of observed mega and cooperative life skills*

1 Mega life skills

As far as self-confidence is concerned, it seems as if the learner did not feel able to do the learning tasks. The learner was not willing to take risks and did not take control of his own learning. Questions were only asked about “his work” which means instructions that he had to carry out. Motivation, which also had to come from the challenge of the learning task, was very low. The extent to which his motivation developed was only to understand his work and to complete it. The learner did not exercise control over his own learning and was waiting for instructions from the facilitator. Therefore he did not show much initiative (scored by the facilitator as 1 – below average). As the learner did not experience any rewarding outcome because of a lack of effort, he was not willing to put in any further effort. The facilitator noted that communication was a problem, but did not plan any learning tasks to overcome it or use an interpreter. She ascribed his slow progress to his abilities. At first the facilitator could not determine the learner’s perseverance and, during the course of the year it only developed into wanting to complete his work. As the learner was only following instructions and waiting for the facilitator to tell him what to do, he did not select from an array of information

what was necessary to solve the problem. Common sense and being able to make good judgments did not improve. As far as responsibility is concerned, the comment by the facilitator tells it all: *It seems as if he feels responsible towards his work, however, he has to be monitored continuously.*

The learner had placed the responsibility for learning on the shoulders of the facilitator, by waiting for her to “check” him. The result was that the learner did not work independently as he felt that the responsibility for his learning was the facilitator’s. No improvement in independence was noted. The facilitator could not determine whether the learner was peaceful or not. He appeared too passive and did not exercise control over his learning. By being passive he was not able to experience self-fulfilment and contentment. As the learning tasks did not seem to challenge this learner to overcome the obstacles, he apparently did not experience joy. The learner was not committed to care for what was around him, therefore the facilitator could not observe love – to care ultimately for himself and everything around him.

2 Cooperative life skills

The learner’s perception of others did not change much. He was not spontaneous and did not communicate much. As there was also not much communication between him and the facilitator it was difficult for her to determine how he viewed others. What she did observe indicated that cooperative life skills had not been achieved as the learner mostly worked on his own. The learner laughed when others made mistakes and was easily angered when being teased. Other learners were not viewed as unique individuals with strengths and weaknesses shared by all. It looks as if the learner mostly focused on himself.

Communication was observed to be a problem. There was also not sufficient communication between the learner and the facilitator. At the end of the year the learner was still observed as shy and not spontaneous. Sharing meaning with others was totally absent.

The learner was observed to have dealt with his feelings. Credit can be given for this growth according to the observation. He was however not spontaneous and communication was still a problem. The facilitator indicated that love for others could not be determined as there was not sufficient communication between the learner and the facilitator. Leadership was also observed not to have featured. It seems as if these competencies did not develop and that the learner was still where he started at the beginning of the year. No changes had been noted.

When trying to answer the question of whether the learner had shown growth in the realisation of his potential, the above observations indicate that most mega- and cooperative life skills had not been obtained, which indicates that metalearning had not taken place. Without metalearning, not much growth in the realisation of human potential could be reported. It should be noted however that the learning tasks in the control group did not seem to challenge the learners. It was only a stimulus response process of giving work and completing it. The teaching materials were probably also not very interesting to the learners. The result of this process was that the interaction between the facilitator and learners was limited. The learners did also not have much interaction with each other as they worked alone. The other two observations of learners in the control group indicated the same problems with regard to the learning task, materials and teaching.

iv a *Observed mega and cooperative life skills of a learner in the experimental group who made average progress*

The data can be found in Appendix C:15-20.

b *Interpretation of mega and cooperative life skills*

1 Mega life skills

At the beginning of the year the learner was not able to do the learning tasks. He was *very quiet* and never *attempted to talk* in class. He did not have confidence when reading. Through the learning tasks which involved reading, the learner

slowly realised that he was in control and that he could do it. The materials were so interesting that it motivated him to do more. As he realised that he could successfully extract meaning from the magazines, he acquired intrinsic motivation, leading to the realisation that he could control events and their outcome. The facilitator commented in this regard *that he has really achieved a great deal of success, which pushes him on for more*. He would even *encourage [the] group to work hard during group work*. He also knew that he could explore and learn more about himself. The learner's developed self-esteem and motivation could be observed by others, as he was willing to take risks and tackle unfamiliar learning tasks.

With regard to initiative, at first the learner was waiting for the facilitator to tell him what to do. Then after some time, he realised that he had to act and began asking if he could have a magazine to read. This also showed that he was more interested in reading. He also started taking initiative to do other chores in the classroom without having been asked. The desire to do something new and challenging after old tasks had been completed was also an indicator of his growing initiative.

The learner did not show much effort in the beginning but as he started experiencing the positive results of putting in more effort with reading and gaining stimulating information, he started taking pride in his work. He spent a lot of effort to correct mistakes and to improve. He started *pushing through* when busy with a task, and later he enjoyed it.

Initially the learner did not show much perseverance. He was easily distracted and just as easily gave up. He started concentrating better as time went by and tried *painstakingly* to read the magazine. He did not ask the facilitator to read it to him but now and then asked the meaning of words. He did not wait for the facilitator to do repetition and drill work for him, but practised a passage until he could read it fluently. Diligence could also be observed. The facilitator commented at the beginning of the year as far as common sense is concerned, that the learner *lacks it all together* and that he *tried to write with [a] pen which has no ink!* It did however improve. He *realised that effort and perseverance led to rewards and made a choice to work hard and achieve even better results*.

At first he did not take responsibility for his own learning. He had to be reminded by someone to bring his book. Improved responsibility could be noted when he took responsibility for doing chores in the classroom, such as fetching cleaning material from the store. When he came back, he exercised responsibility over his own learning by continuing his work and finishing it. Self-discipline was evident when he completed learning tasks and apart from learning tasks, he *turned out to be a very reliable scholar, sending him, especially with money, won't be regretted*, as the facilitator commented.

Independence improved from a level where he was totally dependent on others to do things on his behalf (such as sharpening his pencil), to working independently and finishing in a short time. Apart from learning tasks he would ask to go to the office to pay his school fees and went alone.

Concerning reading tasks, the learner was at first not at peace when he was reading. As his reading improved, he experienced more success and felt excited to start a new learning task from the magazine.

At first the learner found no joy in reading, but as he was experiencing more success with learning tasks (including reading) he became more joyous. With regard to love and caring ultimately for himself and everything around him is concerned an improvement could be seen, for example in the fact that at the beginning of the year he had to be reminded and helped by other learners, but as he felt more in control of his learning, experiencing success, he started helping others with homework, which in turn gave him more exposure to learning and success.

2 Cooperative life skills

The learner's view of others shifted from viewing others as persons who could help and support him to individuals to interrelate with and to serve without feeling inferior. Tolerance with mistakes of others could be observed and humbleness was also noticed.

Communication, which is necessary for cooperative learning to take place, was missing at first because the learner did not communicate in class. Later he started enjoying talking to friends around him. He started sharing information with them – even jokes. During conversations in the group he stayed involved. Through his interaction with others, he recognised the others as human beings, respected others and appreciated what he could learn from others through listening while all were sharing.

As far as dealing with feelings is concerned, he would initially rather keep quiet than talk about feelings, as he did not interact much. As he was interacting more, feelings had to be dealt with. He would not sulk, but deal with feelings right away by reacting in a reasonable way to please both parties involved to create a win-win situation.

Justice and forgiveness improved from not wanting others to fight with him, to the need for also wanting to treat others justly. When injustices were encountered, the culprit had to be brought to justice by pointing out what is right. Forgiveness followed. Honesty and obedience, which are manifestations of justice and forgiveness, were also observed.

At first the learner did not interact much with the other learners. Then he started enjoying being with them, sharing food and clothing with them, which showed caring and compassion for them.

The learner was very shy at the beginning, rather being a follower. As he acquired the mega and cooperative life skills that were already mentioned, he was starting to develop as a leader where the learners in his group began looking up to him. He had developed the skill to influence others positively, for example negotiating about homework during the week but not during holidays.

From the above observations, it can be concluded that the learner had indeed shown growth in the realisation of his potential.

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From the above observations, it can be concluded that the learner had indeed shown growth in the realisation of his potential.

- v a *Observed mega and cooperative life skills of a learner in the control group who made no progress*

The data can be found in Appendix C:12-14.

- b *Interpretation of mega- and cooperative life skills*

- 1 Mega life skills

As far as self-confidence is concerned, the learner was observed to be very quiet and not to react easily. Communication between the learner and the facilitator was described to be a problem. Almost no improvement could be observed – only that the learner was a little bit more spontaneous, but did not react out of her own. It is clear she did not feel able to do the learning tasks. She did not feel that she was in control of her own learning, contributing to her poor self-image and unwillingness to take risks. She was not motivated to do more than what was expected of her. The facilitator doubted whether she was motivated at all. Because of a lack of communication between the learner and the facilitator, even at the end of the year the facilitator still found it difficult to observe if she was motivated. One aspect that can be questioned is whether the learning tasks were challenging enough for the learner. She did not experience success and therefore did not want to do more. By the end of the year she was observed as follows: *Still does only what is required. There seems to be no motivation.*

Her initiative did not improve either. She was observed only to do her work and less. By the end of the year, she was still only doing her work. She was waiting for others to prompt her into action. She seemed not to have been interested in what she was doing. The effectiveness of the learning task to draw the learner's interest in this regard is questioned. During the whole year the learner was not observed to make any effort to participate in class activities. There was no improvement. There was no effort to grow in the realisation of her potential and she had not experienced how rewarding the outcome of hard work could be.

meaning could not be shared with others. There was not sufficient interaction to determine how the learner dealt with feelings in the group. The facilitator could not determine justice and forgiveness, as there was not sufficient interaction and even by the end of the year did not know her well enough. As the previous competencies had not been obtained by the learner, she could not develop into a leader. By the end of the year she was still a follower, waiting for others to act on her behalf.

The question that inevitably comes to mind at this stage is whether the learner had shown growth in the realisation of her potential. The following comments can be made on the basis of the observations:

The mega- life skills, which are the consequence of metalearning, were not obtained. At the end of the year the learner was on the same level as at the beginning of the year. As cooperative learning did not take place, cooperative life skills were not obtained either. The problem of un compelling learning tasks, the material and un compelling ‘teaching’ methods (stimulus-response, according to the outside-in paradigm) were also found to exist in this case as the learner was in the control group. The findings should therefore be viewed in the light of these negative circumstances. According to the observations as measured by the observational instrument, the learner had not shown much growth in the realisation of her potential. Some credit can however be given to the fact that, in spite of these circumstances, the learner did however manage to show a slight improvement in reading speed, according to the quantitative data that are discussed later.

vi a *Observed mega and cooperative life skills of a learner in the experimental group who made no progress*

The data can be found in Appendix c:21-26.

b *Interpretation of observed mega and cooperative life skills*

This particular learner did not show any improvement on the quantitative measure of the literacy test, as he almost scored full marks at the beginning of the year and then scored the same at the end of the year – therefore no progress was shown on

that specific test. The One Minute Reading Test did however show gains in reading speed. From the first day it was observed that this learner was academically far ahead of the other learners. It is interesting to see how the learner showed growth in the realisation of his potential, even though it seemed as if he *already knew everything* when he came to the school on the first day in January (a comment made by the facilitator).

1 Mega life skills

The fact that the learner was the only one who understood and spoke English very well, made him feel confident and in control. The facilitator did not want these skills to be unused and decided to assign the task of being the English/Sotho interpreter to him. The learner was observed to have a good self-image without being arrogant. He felt confident to take on learning tasks with greater challenges, which he asked for. He automatically took the lead in class from the first day, without being boastful.

From the start he was motivated to complete learning tasks as well as he could, but constantly he set more challenging goals for himself. He wanted to do more and asked for more work and even homework. He set his own pace – far ahead of the others, and maintained it. Intrinsic motivation was present and the learning tasks motivated him to do more and better.

Initiative, which manifested in energy, interest and activity, could easily be observed, but it was not something that lay dormant, but was looking for an opportunity to act each day, such as the following examples: he always took initiative to give explanations to the class when being asked. He assigned the task of opening the windows in the mornings to himself. He also handed out the magazines. If someone was in need of help, he would give assistance, such as showing a learner the way to the office. When the facilitator was once called to the office, the learner would take a magazine and decide without being asked, to read an article to the class. The link between initiative and planning and organising could clearly be observed in the way that the learner compiled his own word-list according to his own reading-learning task. When he came across parts

that were too difficult, he took initiative to leave it and obtain the necessary information from another source, go back and complete it. Effort, which was one of the driving forces through which his potential was constantly being realised, could be observed. He was constantly challenging himself to do more. He wanted to do more because he had tasted the rewards of harder work. He had made a choice that the magazines would, apart from the learning tasks, serve the purpose of broadening his perspective about the world and that they would be used to extend his general knowledge. He read as many articles as he could and then went to the facilitator and told her what he had read.

As the learner knew that he was in control of his learning, he also knew that no one else was going to make sure that the goals that he had set for himself would be reached. The learner knew the rewards of completing challenging learning tasks and therefore continued working until each goal was reached. He was not distracted from his work - even the temptation of sitting in the sun because the physical training teacher was absent - or having the opportunity to walk around, as the facilitator wanted to send a learner to the office to fetch something, were not given in to. He would rather stay involved with the learning task and complete it. The learner's development of common sense did not only benefit himself, but also those around him. He had made the discovery that it is strange that words with the same written letter such as "a" in man and master do not have the same sound. The matter was discussed with the facilitator who provided information. The rest of the class could then benefit by the sharing of the information, which started with the learner who showed common sense. The learner would also uncover the projector and do what needed to be done, such as keeping the stack of books from falling over. The facilitator used the learner's common sense when facilitating group work in different groups.

The learner took responsibility for his own learning and wanted to prepare himself for his future. He took responsibility to work even harder for greater success. He also took responsibility for the whole group now and then, by opening the classroom, handing out the books and getting everything ready so that when the facilitator arrived, everything was ready for the work to continue. He did not wait

for someone to teach him study methods. He would take his scribbler and make diagrams with added detail without anyone's help. The learner's work was characterised by being thorough and he was observed to be consistent, dependable, punctual and reliable – characteristics of a responsible learner.

The learner easily worked on his own because he relied on himself to do his work. His independence could also be observed in the fact that he tended to go to the library on his own. He was indeed independent to maximise his own potential. As far as peacefulness is concerned, he had come to know himself and was in control of his destiny, therefore he was at peace with himself. He was in touch with his inner potential. The facilitator observed that he looked very secure and that because of his progress and success, he was at peace with himself. He was well adjusted and content with circumstances in class. His positive outlook in life was strengthened through reading.

As the learner had experienced the completion of challenging learning tasks and the rewards, he felt joyful. The joy that flowed from him could easily be noticed by others. Group work also brought joy to him – accepting a challenge, conquering the obstacle and finishing first. The facilitator's reaction to his success increased his joy.

The learner was constantly growing in the realisation of his potential and was experiencing the joy thereof, but he was not selfish in wanting to keep it to himself. He also wanted others to grow in the realisation of their potential. This is evident in the fact that he respected everything around him and was always willing to help others in need showing a lot of patience in the process. Because of his attitude towards others (respect and caring) he attracted many others to him, who became his friends. With regard to caring for things around him he liked the class to be clean and neat. Out of his own he would observe the surroundings, fetch the duster and start dusting. He would sweep the floor and even the verandah in front of the class. This learner was indeed an example to the others of how one can grow in the realisation of one's potential.

2 Cooperative life skills

The learner viewed others as fellow human beings with the same feelings as himself. He viewed them as humans who also have needs and who have to be supported. He had indeed witnessed how others can improve when they are supported. He was tolerant with the mistakes of others and realised that he was more privileged than others and he was grateful for that. The facilitator admired the quality of his humbleness towards others. Even though he was by far the best learner in the class, he was always willing to assist others. He realised that he could not fulfil his purpose without others.

The way in which he communicated with others was quite natural. He shared information with other learners, but it was never done to impress them. He recognised the other learners for whom they were, respected them and appreciated that they could all learn from each other.

Regarding dealing with feelings he realised what the consequences of negatively reacting to feelings could be, therefore he tried as far as possible always to act respectfully. Because he could take control of his own feelings, other learners noticed it and came to him to help them stop fighting. He would point out to them that one should for example not fight over a pencil. Even when others tried to take advantage of his kind-heartedness, he would not act negatively. This learner was indeed not a victim of his feelings.

Concerning justice and forgiveness the learner wanted to be treated respectfully and treated others in the same way. When learners had been fighting, he wanted them to shake hands after the fight. He had become such a role model that they would say: *Ask Matibisi. He would tell the truth.* The learner was also generous. He shared his snacks with others when they went on a trip to the zoo and had already spent all their money. His love for others was evident in the fact that he expressed his care by always reaching out to others and helping them. He would also encourage others. Because the other learners saw the love for others in his character, with all its good qualities, the facilitator observed that they adored him.

From the first day this learner was the leader of the class – he had appointed himself. Slowly he became the role model of the other learners. His leadership skills were developed from day to day (by himself) as he accepted challenges. To the facilitator’s amazement he started counting all the learners at the zoo before they departed, making sure that no one had got lost. He would always keep an eye on the learners in class, so that he was the one who knew which learners had been absent during the week. He would then also inform the facilitator.

When one considers the question of whether the learner had grown in the realisation of his potential, the answer is definitely in the affirmative. Even though the learner had started with a huge lead above the other learners, his potential was not left to stagnate. It seems as if he had taken every opportunity as a challenge to grow in the realisation of his potential. The learner obtained all the mega life skills, which were indicators that metalearning had taken place. The challenging nature of the learning tasks, that made use of magazines to compel the learner even further, was a huge contributor to the whole process of achieving growth in the realisation of human potential. Through cooperative learning all the cooperative life skills were obtained, benefiting the other learners who interacted with him. This learner is indeed a good example of a person who has achieved growth in the realisation of his potential and will probably continue doing it, as a lifelong process.

When one compares the observations of the learners in the control group with that of the experimental group, the difference is very obvious. The learners in the experimental group showed more growth in the realisation of their potential, as the mega and cooperative life skills indicate, while the control group, with its lack of communication, interaction and compelling learning tasks, did not show the same progress. The data that follow will support this statement.

Where the progress in the two groups regarding mega and cooperative life skills has been discussed the rest of the qualitative data will be presented: firstly an

analysis of the learner interviews followed by interviews with the facilitators and lastly an interpretation of the diary of the facilitator of the experimental group.

6.6.1.3 Methodology of data analysis and interpretation: learner interviews

As already mentioned, six learners were selected for the interviews. For the selection purposes the quantitative results of the literacy test in January were used. Two learners with low scores, two learners with average scores and two with above average scores were selected. Three learners were in the experimental group and three in the control group. The purpose of the interviews was to determine whether the learners would acquire cooperative and mega life skills during the course of the year. Interviews were conducted at the beginning and at the end of the year.

The method of data analysis used the Huberman and Miles approach (De Vos, 1998:340) as a guideline. The process of data analysis consisted of three linked sub-processes: data reduction, data display and conclusion drawing or verification.

During the process of data reduction, the interviews that had been written word-for-word, after they had been tape-recorded, were coded according to the specific life skill about which they gave more information. Thereafter, during the process of data display, it was organised according to the specific categories, to enable the researcher to think about its meanings. During the process of conclusion drawing or verification, the researcher made interpretations from the displayed data. These three processes were followed at the beginning and end of the year. At the end of the year the interpretations of the two sets of data were compared to each other to determine whether there was any improvement or not.

In the next section the interviews with the learners, and their interpretations are presented.