CHAPTER 1

INTRODUCTION

The purpose of this chapter is to present an overview of the study, outlining the critical foci and rationale for the research, methodological issues and research procedures.

1.1   Education legislative context

The birth of democratic government in South Africa (SA) in 1994, led to the generation of a plethora of legislation that intended to introduce fundamental changes within different government sectors[1]. The education legislative framework formed one of the critical components for large-scale system wide change. This framework requires the education system and curricula to transform by addressing issues of accountability, redress, mobility and equity for all South Africans, especially those who were educationally disadvantaged prior to the first democratic elections in 1994. In meeting the national education needs, it has become necessary that education also moves forward by keeping pace with international developments (SAQA 2000c) regarding higher education's social accountability, curricula relevance and mode of instruction (Drucker 1994; Glidden 1997).

In South Africa, the current Minister of Education, Professor Kader Asmal, contends that the higher education sector in South Africa has not engaged in rigorous debate and research on critical questions that confront it, such as: the erosion of the performing arts at arts and education institutions; the impact of outcomes-based education on the humanities; and the impact of the increasing shift towards interdisciplinary approaches in undergraduate education on the future of traditional disciplines (Asmal 2000c: i). This study attempts to engage in critical discourse on the implications of SA education policy on qualification design in Music Technology.

1.2   The need for this study

Internationally, Music Technology programmes have been designed to cater for individual countries' educational (pedagogic) and economic (industry) needs: for example, the programmes at Berklee College of Music (USA), Queensland University of Technology

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[1] Examples of sectors include Health, Social Welfare and Education.

(Australia), and the School of Audio Technology (New Zealand) cater primarily for industry needs, while Monash University (Australia), Northwestern University (USA), and the University of Southampton (UK) fulfil educational (pedagogic) as well as economic needs. These claims by the institutions are rooted in ensuring the employability of future learners to sustain the economic viability of a nation in terms of global competitiveness. Educators therefore respond accordingly.

In South Africa, most institutions have introduced Music Technology programmes in response to international trends in the field (Devroop 2001b). However, due to the vagueness surrounding national employment requirements in areas of music industry and/or education, current training in Music Technology is producing graduates with differing specialties who, in most cases, are uncertain of their career paths.

The uncertainty surrounding the Music Technologist's role in South Africa is compounded through the dispersal of Music Technology in Music departments' curricula into diverse and sometimes unrelated areas of study (see Chapter 2.1.4). Several of these Music Technology programmes appear to be tailored toward the Sound-Production/Post Production Engineer, the training of Composition and Music Theory students, or majors in Electro-acoustic Music. This situation arose partly through the absence of registered Standards Generating Bodies (see Chapter 4.1.2) and the inability on the part of the institutions offering the course(s) to reflect the transformational changes required by the new education framework.

According to the South African Qualifications Authority (SAQA) Act 58 of October 1995 (RSA 1995: 1) current and new Music Technology programmes in South Africa need to be registered with the South African Qualifications Authority (SAQA). The registration process has been delayed due to a host of factors, including bureaucratic and financial factors, stakeholder participation and the shortage of standards writing skills.

In order to fast-track the standards generation process and foster educational growth it is preferable that all stakeholders (including learners, educators and providers of education) learn to adjust to transformational and technological change, since they all share in educational responsibility. It is this change that ultimately will yield new career paths in music and challenge existing roles and competencies.

1.3 Rationale and the main research question

In order to understand the development of the main research question in this section, the relationship between the researcher and the research will be clarified and some background to the research will be provided.

Between 1998 and 2001 I implemented a Music Technology programme at the University of Pretoria (UP). This programme, which was UP's first, was used as the platform to pilot the potential outcomes and knowledge content for a future draft qualification in the form of an undergraduate course. The UP programme formed the basis for a case study using Music Technology within an existing curriculum (see Chapter 4.3). Other means of implementing such a Music Technology programme, such as a certificate or diploma programme, were not possible at the time. The Music Technology programme at UP (hereafter referred to as a course in this section, because this is its current academic classification) was instituted as an elective in the fourth year of specialized Music study. A needs analysis formed the basis of this course. The course introduces prospective music specialist students to a basic knowledge of Music Technology for their potential careers as musicians, educators, therapists and musicologists. The course focuses on using the computer as a tool to enhance the music making, creation and production processes. The structure of the course was developed using the areas of specialization of existing international Music Technology curriculum models. Since its implementation, the UP course has been reviewed after each successive year. The primary recommendations made by the following external educators in the field of Music Technology were implemented in the Music Technology course at UP: Marc Duby (Technikon Pretoria), who suggested making the course more user-friendly and vocationally orientated; Jürgen Bräuninger (University of Natal-Durban), who preferred a project-based course with continuous assessment as opposed to an examination-based course where learners were evaluated only twice in the year (June and November); Jay Fern (Indiana University-Purdue University, Indianapolis) and David Mash (Berklee College, Boston), who recommended structural and content changes to reflect international trends.

Apart from this formal course instituted at UP, colleagues, research assistants and I hosted short courses, which dealt with isolated areas of specialization (see core competencies discussed in Chapter 3.3.1) of Music Technology, at various education institutions in South Africa: University of the Free State (Bloemfontein), Musikon (Bloemfontein), University of Pretoria (Pretoria), Independent Examinations Board of South Africa (Johannesburg), South

African Society of Music Teachers (Pietermaritzburg branch) and St. Anne's College (Hilton). After a period of three years I arrived at the following list of needs (in no specific order) with regard to these groups of learners, albeit with different musical abilities and levels of musical expertise:

- Formal, sequentially structured courses in Music Technology;
- Clear guidelines with regard to the areas of specialization (core competencies) within the field of study of Music Technology;
- A logical, sequential progression of learning content;
- Project-based tasks and assignments whereby learners could synthesize both theoretical and practical skills;
- A learning programme that fosters problem-solving skills within projects and assignments, as opposed to merely acquiring disciplinary knowledge;
- Assessment criteria that could be used to evaluate learners' progress in order to enable mobility within the field of study and between other qualifications;
- Clear exit level outcomes that support career possibilities within this field of study and promote employability; and
- A design profile tailored for music education students with little background in technical and scientific disciplines.

These needs were used to guide the ongoing design of the course at UP. Due to the limited curriculum, scope and transferability of course credits I identified at undergraduate level, I took part in a short course in January 1999 at Indiana University-Purdue University School of Music (IUPUI), under the supervision of Professor J. A. Fern. The short course at IUPUI allowed me the opportunity to design a broad framework for the field of study of Music Technology. It was during this course at IUPUI that I reflected upon the course I designed at UP and compared these two courses and other similar courses/programmes offered in the USA. However, apart from the IUPUI course, the only other documented course I found at the time was one designed for secondary schools in the USA, called *Fundamentals of Music Technology* (1994) by Dennis Mauricio and Steve Adams. In cases where formalized courses in Music Technology existed, the majority of the course leaders were reluctant to divulge content or course structural designs. The reasons for this reluctance are unknown to me. During the period at IUPUI, I redesigned the UP undergraduate programme and designed a new Honours programme in Music Technology for UP. These programmes are

currently implemented at UP. The IUPUI course provided me with a platform from which to conceptualize a broad approach for Music Technology as a field of study, at both undergraduate and postgraduate levels.

In South Africa, meanwhile, bureaucratic obstacles, lack of participation by the key stakeholders[2] in education, institutional restructuring and, most importantly, lack of funding were hampering the national education transformation process[3]. National government, who were calling for change on all education fronts, were incapable of providing the financial support necessary to bring about change.

Professor Caroline van Niekerk of UP saw the need to initiate the process of transformation in music education. In 2000 Van Niekerk decided to undertake the generating of unit standards[4] (discussed in Chapter 4.1.4.3) for music education in South Africa. She constituted a team of post-graduate researchers called MEUSSA (Music Education Unit Standards for Southern Africa). MEUSSA's objective was and is *inter alia* to generate and present to the South African Qualifications Authority (SAQA) a set of draft unit standards for music education. The purpose of the MEUSSA project was to accelerate the process of registering new qualifications and unit standards on the National Qualifications Framework (see Chapter 4.1.2). I was identified as a MEUSSA team member who could explore the possibilities of unit standards and/or qualification design for Music Technology at post-secondary level. To date, six MEUSSA team members[5], as part of their doctoral research, have successfully accomplished the task of unit standards generation in diverse areas of music education.

The MEUSSA team addressed issues pertaining to unit standards writing and the transformation of South African Music curricula, at all levels of the education spectrum through discussions, video and tele-conferencing, e-mail correspondence and

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[2] Representatives of the state, organized labour, organized business, providers of education and training, critical interest groups, the community and learners.

[3] Transformation refers to a change both in structure and in character. Transformation is discussed in greater detail in Chapter 4.1.1.

[4] A unit standard is an education specific term associated with outcomes-based education that has been introduced into the South African education context (see Chapter 1.9 and Chapter 4.1.4.3 for a detailed explanation).

[5] A. Bennett, R. Bosman, J.P. Grové, A. Hoek, A. Röscher and U.L. Wolff.

presentations. The curricula and transformation issues were enhanced with inputs made by both the international and national Critical Friends of the project. These discussions and inputs played a pivotal role during the formative stages of this research.

My involvement with the MEUSSA team and the Standards Generating Body (SGB) for Music at the Higher Education and Training level (I am current Chairperson of this SGB) that deals with issues of standards generation in Music Technology, and curriculum developer as a provider of education (University of Pretoria) coupled with my experience as a learner in Music Technology (student at IUPUI in Music Technology), heightened my awareness of the difficulties of incorporating an emerging field of study in South Africa with the transformational agenda of education policy. The three roles that I fulfil have a strong correlation with the curriculum development process outlined in Chapter 5.2. The difficulties experienced at these three levels (SGB, Provider and Learner) gave birth to this research, especially the underlying main research question.

The main research question that underpins this study is:

- How does the nature of the field of Music Technology and current South African education policy contribute to the development of a conceptual framework that informs the design of a qualification in Music Technology?

1.4   Research sub-questions

The main research question stated in Chapter 1.3 is broken down into two sub-questions, which will provide foci for this research. In order to identify the key issues that would form the basis of a conceptual framework for qualification design, an examination of the field (Music Technology in this case), issues pertaining to South African education policy and how both the field and policy interact, need to be established. The specific sub-questions that will underpin this research are:

- What is the current nature of Music Technology internationally and as an emerging field of study in South Africa?
- What are the implications of current South African education policy for transformational qualification design?

1.5   Purpose of this study

Rather than presenting formulaic response to South African Qualifications Authority guidelines, this research provides a basis for the writing of national standards in Music Technology based on critical discourse that is underpinned by a theory for qualification design. The research also assists in accelerating the current standards generating process.

In answering the research questions posed in Chapter 1.3 and 1.4, this study constructs a conceptual framework that will inform the design of a qualification in Music Technology at post-secondary school level, using the field of Music Technology and the philosophy of outcomes-based education (OBE)(Spady 1994: 13-19), and taking the South African education policy context into account. This conceptual framework could form the theoretical basis for the generation of qualifications in other fields located within a similar education context. In answering these research questions this study contributes to education research by:

- Firstly, attempting to contextualize global trends in Music Technology to the South African socio-political and transformational conditions. This is sought through dealing with the challenges of designing a qualification in Music Technology that meets international trends whilst at the same time addressing the transformational agenda of accountability, redress and equity;
- Secondly, conceptually relating key concepts identified in the field of Music Technology and education policy that should guide the design of a qualification in Music Technology;
- Thirdly, in attempting to locate qualification design in Music Technology within a curriculum development framework, this study develops a holistic curriculum development model that includes three levels, namely the design of a qualification, and the development and implementation of a learning programme (for teaching, learning and assessment); and
- Finally, constructing an exemplar of a certificate qualification in Music Technology at NQF Level 5.

The benefits of this study are deemed as:

- Addressing the lack of research in this transformational area of education in South Africa.
- Providing a framework for continued scholarly discourse/discussions.
- Providing the reader with insight into:
    o Current research in Music Technology;
    o Current national and international trends in Music Technology; and
    o A basic framework for standards writers.
- Initiating a point of departure for subsequent research.
- Designing an exemplar Certificate qualification in Music Technology.

1.6 Research methodology

This study is eclectic in nature and therefore adopts research methodology that focuses on gathering background information to support the literature review. The qualitative research approach is used, in which three research tools are dominant: a literature review, interviews and personal communication, and Internet surveys (see Chapter 1.6.3) of various Music Technology programmes offered internationally.

1.6.1 Literature review

For this research, current literature relating to the use of education and music technologies and their manifestation in music and education was reviewed. Reasons for the use of specific technologies (see Chapter 3.3) were gleaned from books, journals, case studies and periodicals.

Available studies (see Chapter 3.2) similar to this research were examined in order to obtain an international perspective of the field of study. The results of these studies were compared and mapped against information obtained via the Internet (see Chapter 1.6.3) relating to courses offered in Music Technology at post-secondary institutions worldwide. This investigation unearthed a broad overview regarding the areas of focus in the field of study of Music Technology. The structure, format and content of these reviewed studies were synthesized to form the structural basis for this research.

Following a detailed review of the standards (and in some cases* unit standards) present in the education frameworks of Australia*, Canada, Germany, Holland, New Zealand*, Scotland*, the UK, and the USA by the MEUSSA team, particular similarities between the South African and New Zealand frameworks became apparent.

1.6.2   Interviews and personal communication

In order to establish national trends in Music Technology, a questionnaire was devised and administered telephonically to all South African post-secondary institutions purporting to have programmes in Music Technology in 2001. A copy of the questionnaire and the findings thereof are available in Appendix A and Chapter 3.4 respectively. It was also necessary to conduct a sample of six telephonic interviews to gather additional data on selected aspects of Music Technology (Appendix B). All of the institutions that participated in the questionnaire and interview responded with enthusiasm and were keen to view the results, because they envisaged this study could have a direct impact on the future of their Music Technology programmes.

During the ISME International Conference (July 1998) in Pretoria, I interviewed Andrew Brown of Queensland University in order to obtain his views on Music Technology curriculum content and to describe the rationale and purpose behind the Music Technology programme at Queensland University in Australia.

Following the interview with Andrew Brown, an interview with Professor David Mash, Vice President of Technology at Berklee College of Music, Boston was undertaken in Boston. Issues in the interview covered curriculum content, course design, equipment and laboratory requirements, supporting literature and a discussion on the rationale and purpose of the Music Technology programme at Berklee College of Music. E-mail correspondence with Professor Mash was maintained in order to verify data obtained in Boston and to utilize his expertise as an advisor on subject specific issues related to this research.

From both discussions (Brown and Mash) it was clear that their programmes were designed against the backdrop of their country's specific industry needs. Their programmes were tilted toward equipping students with knowledge and skills that were marketable and industry focused. In both these discussions it was apparent that the industry trends and needs in the USA were starting to manifest themselves in the Australian music industry. The balance

between theoretical (academic) and practical (vocational) skills with Music Technology programmes seemed of central importance in both countries, unlike South Africa where existing programmes are predominantly theoretically biased.

Apart from the above interviews, leading experts (Brown, Fern, Fields, Lansky, Mash, Ram and Webster) in the fields of Music Technology, educational technology, education, science and technology, as well as relevant personnel at SAQA were consulted on issues pertaining to their areas of specialization. An extensive e-mail correspondence between specialists (Brown, Fern, Fields, Lansky, Mash and Webster) in the field of Music Education, Music Technology and SAQA related issues was maintained in order to constantly update subject-specific information and gather expert opinion with regard to curriculum design and South African education policy issues.

1.6.3   Internet surveys

The Internet was used to ascertain international trends in Music Technology. Where possible, precautions were taken to access the most recently updated websites in order to extrapolate the latest available data. These surveys focused on the diversity of Music Technology programmes offered, the areas of specialization that make up Music Technology, the nature of the subject matter and the possible career paths available to Music Technologists. In the case of certain websites, the course coordinators were willing to engage in online chats[6] with me on issues pertaining to curriculum, course content, current trends and their perceived future directions for Music Technology.

1.6.4   Validity and reliability of data

In order to establish whether the data obtained from the individual sources were valid, a methodological triangulation was used. The data obtained from the literature review, interviews and correspondence and the Internet surveys were analyzed separately. These data from the three sources were mapped against each other and the results (see Chapter 3.3 and 3.4) yielded a clear correlation of the data obtained amongst the sources.

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[6] IRC or Internet relay chats.

1.6.5 Education policies examined

The generic use of "national education policy", or "education policy" in this research refers to the following South African legislation and policy documents:

- Skills Development Act (Act 97 of 1998);
- Higher Education Act (Act 101 of 1997);
- White paper: a Programme for the Transformation of Higher Education, July 1997;
- SAQA Act (Act 58 of 1995);
- NSB Regulations (Regulation 452 of 28 March 1998);
- Criteria and Guidelines for the Assessment of NQF Registered Unit Standards and Qualifications;
- The National Qualifications Framework (NQF): An Overview;
- The NQF and Curriculum Development;
- The NQF and Quality Assurance;
- The NQF and Curriculum 2005; and
- The NQF and Standards Setting.

Any references made to policies other than the above, nationally or internationally, are clearly cited in this study. Only those policies that have a direct impact on this study were examined. From this point on, South African education policy will be referred to as education policy.

1.7 Scope and limitations of this study

The vibrant world of technology encompasses a wide range of parameters. Any attempt to detail the complete technological world would be beyond the scope of this study. Technologies employed in this research are examined on the basis of their capabilities of creating, performing, appraising and processing music because they would most likely impact on the educator for use in an educational setting, besides being the most accessible and available tools in use.

Several types of music technology (identified in the survey in Chapter 3.3) are considered to be beyond the scope of this study. These include:

- Entertainment technology;
- Music adventures and games;
- Administrative and marching band charting;
- Computer-based librarians and editors;
- Audio-visual presentations;
- Programmed instruction;
- Teaching machines;
- Television and film; and
- Acoustic musical instrument development (see also Chapter 2.1.1.).

The term "technology" in the context of this research refers primarily (but not exclusively) to computers and all of the music and non-music peripherals (mixing consoles, guitar effects, valve amplifiers, and the like) that are needed to perform music tasks with computers. These peripheral devices include such hardware as electronic musical instruments, MIDI devices, printers, scanners, CD players and audio technology equipment, and software such as sequencing (the storing of musical information in a desired order), audio processors and multimedia.

The following limitations of this study were not regarded as seriously detrimental, because this was an individual effort based on critical discourse about education theory, education policy and an emerging field of study. This study was therefore not a mere technicist response[7] to education policy. The limitations included that:

- The qualification design did not engage stakeholder participation because this was logistically and financially not feasible.
- The MEUSSA team only comprised music educators who were generating standards (one sixth of the stakeholder representation), which raises questions about the legitimacy of the process of standards generation in terms of legislative requirements.
- The qualification was not peer reviewed for its validity because no post-secondary institution in South Africa has implemented outcomes-based education as yet. Besides, existing Music Technology practitioners and

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[7] A mechanical response using jargon or subject/discipline specific language, in order to satisfy a particular need or requirement.

educators in South Africa were found to be largely unfamiliar with current South African education legislation.

- Since all post-secondary institutions in South Africa are not equally resourced in terms of technology equipment, facilities and expertise, the qualification attempts to describe the current state of the use of technology among a selective segment of the population.
- The attitudes and values of learners and educators toward technology and its implementation were not investigated.
- The telephonic interviews conducted among post-secondary institutions nationally expressed the views of the Music Technology course leaders and not necessarily the views of the learners. Therefore the voices of a key stakeholder group, namely the learners, are unheard (a serious concern amongst standards writers).
- This study used as its basis current documentation on education in South Africa, even though much of this is in a state of flux.

1.8   Assumptions

This study is justified in terms of the current education policy documentation (see Chapter 1.6.5) pertaining to Education and Training in South Africa, where the disciplines of Mathematics, Science and Technology are given prominence according to current legislation (DoE 1997). It is assumed then that Technology as referred to in this document, implies technology in all of its manifestations, including that of educational technology of which Music Technology is a component. A qualification or curriculum based on Music Technology is therefore assumed to be a priority.

The legitimacy of national education policy is not interrogated in this study. It is assumed that national education policy is based on the vision of the mass democratic movement that includes historically disadvantaged communities and which prioritises the issues of redress, equity and accountability.

1.9 Explanation of terms

Several of the terms explained in this section are defined in education policy documents or South African Qualifications Authority literature.

Assessment	Is the process of determining capability, which is carried out by observing and evaluating performances.
Assessment criteria	Provide evidence that the learner has achieved the specific outcomes and are explained and detailed in the range statements.
Competence	Involves the capacity for continuing performance within ranges and contexts resulting from the specific integration of a number of specific outcomes.
Credit	Is the recognition that a learner has achieved a unit standard.
Critical cross-field outcomes (also referred to as critical outcomes)	Describe the qualities, which the NQF identifies for development in learners, regardless of the specific area or content of learning, i.e. those outcomes that are deemed critical for the development of the capacity of lifelong learning.
Curriculum	Includes all aspects of teaching and learning, and is everything that influences a learner, from the teachers and the work programmes right down to the physical structures (DoE 1997: 10).
Curriculum development	Is the development of units of learning consisting of learning outcomes, assessment criteria, range statements, evidence requirements and learning materials.
Curriculum framework	Is a philosophical and organisational framework, which sets guidelines for teaching and learning.
Curriculum 2005	Is a lifelong learning document for the 21st century where education is the tool for developing a person to his or her full potential in South Africa. This document is still available for public comment and has not been finalized at the time of this research.
Essential Outcomes	Are cross-curricular, broad generic outcomes that inform teaching and learning (Committee for development work on the NQF 1996: 15).
Exit level Outcomes	Are the planned combinations of learning outcomes - both specific and critical - that are required for competence at the particular level of the qualification.

Explanation of terms (continued)

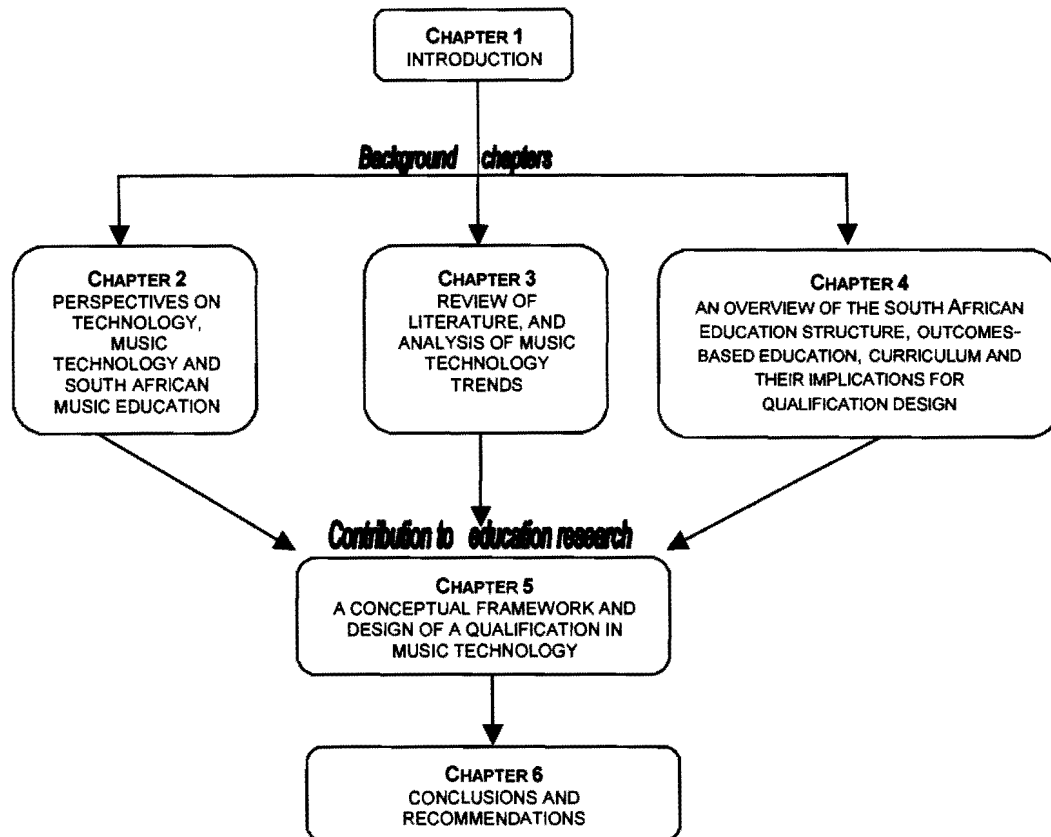|	
Field – see Organizing Fields	
Learning area	Is a term replacing the traditional "subject". It represents a broader knowledge field, which is informed by the commonalities it shares with other learning areas, such as to ensure that fragmented views of learning are counteracted.
Learning programme	Is a term replacing a traditional "syllabus". It is a vehicle through which the curriculum is implemented at various sites such as schools, comprising a set of learning activities in which the learner will be involved working toward the achievement of one or more specific outcomes.
Level descriptors	Are hierarchical classification levels determined by the NQF according to incremental complexity of process, learning, responsibility and application. Currently eight levels exist with level eight being the most difficult.
Model C Schools	Are historically advantaged state-aided schools that were classified as such around the 1990s, instituted by government's education policies at the time.
National Qualifications Framework	Is a framework for providing lifelong learning opportunities utilizing nationally recognized levels.
Organizing Fields (sometimes referred to as Fields)	Are fields not based on traditional disciplines or subjects; nor are they based on economic sectors. These fields are a convenient mixture of fields and sub-fields to make standards generation possible. They are based on a hybrid of both subject disciplines and occupational areas. The NQF divides all education and training, for organizational purposes, into 12 Fields.
Outcomes (see also Essential, Exit level and Specific Outcomes)	Are the results of a learning process, formal, non-formal or informal, and refer to knowledge, skills, attitudes and values within particular contexts (DoE 1997: 4).
Outcomes-based education	Is an educational approach linked to the National Qualifications Framework, focusing on the results of a learning process.
Performance criteria	Are criteria against which the achievement of specific outcomes by the learner may be assessed (DoE 1997: 4).
Qualification	Means the formal recognition of the achievement of the required number of the range of credits and such other requirements at specific levels as may be determined.

Explanation of terms (continued)

Range statements	Indicate the scope, depth, level of complexity and parameters of the achievement, and include indications of the critical areas of content, processes and context, which the learner should cope with, in order to reach an acceptable level of achievement.
Specific Outcomes	Are contextually demonstrated knowledge, skills and values, reflecting critical outcomes (Committee for development work on the NQF 1996: 15).
State-of-the-art technology	Refers to the most recently invented "high-tech" devices including the microcomputer, electronic keyboard, compact disc, CD ROM, and laser disc player.
Sub-fields	Exist within the 12 Organizing Fields. Sub-field delineation is a dynamic exercise; it will change over time for purposes of operation. Sub-fields are temporarily frozen to facilitate standards generation.
Technology Education	Is concerned with technological knowledge and skills. It also requires the creation of awareness and some understanding of technological processes and the impact of technology on both the individual and society (COTEP 1996: 64).
Title matrix	Is a conglomeration (matrix) of titles, where each title reflects a main outcome of learning for which an individual deserves national recognition in a specific field.
Unit Standards	Are nationally registered sets of specific learning outcomes with their associated assessment criteria and other technical information required by the South African Qualifications Authority. It describes the outcomes of learning and the standard of performance that must be achieved.

1.10 Overview of this study

The interrelationships of the six chapters that constitute this study are illustrated in Figure 1.1.

Figure 1.1: Structure of this study

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                    ┌─────────────────┐
                    │   CHAPTER 1     │
                    │  INTRODUCTION   │
                    └────────┬────────┘
                             │
                 Background  │ chapters
        ┌────────────────────┼────────────────────┐
        ▼                    ▼                     ▼
┌──────────────┐    ┌──────────────┐    ┌──────────────────┐
│  CHAPTER 2   │    │  CHAPTER 3   │    │    CHAPTER 4     │
│PERSPECTIVES ON│   │  REVIEW OF   │    │AN OVERVIEW OF THE│
│ TECHNOLOGY,  │    │LITERATURE, AND│   │ SOUTH AFRICAN    │
│   MUSIC      │    │ANALYSIS OF MUSIC│ │EDUCATION STRUCTURE,│
│TECHNOLOGY AND│    │ TECHNOLOGY   │    │OUTCOMES-BASED    │
│SOUTH AFRICAN │    │   TRENDS     │    │EDUCATION, CURRICULUM│
│MUSIC EDUCATION│   └──────────────┘    │AND THEIR IMPLICATIONS│
└──────────────┘                        │FOR QUALIFICATION DESIGN│
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Chapter 2

PERSPECTIVES ON TECHNOLOGY, MUSIC TECHNOLOGY AND SOUTH AFRICAN MUSIC EDUCATION

Chapter 3

REVIEW OF LITERATURE, AND ANALYSIS OF MUSIC TECHNOLOGY TRENDS

Chapter 4

AN OVERVIEW OF THE SOUTH AFRICAN EDUCATION STRUCTURE, OUTCOMES-BASED EDUCATION, CURRICULUM AND THEIR IMPLICATIONS FOR QUALIFICATION DESIGN

Contribution to education research

Chapter 5

A CONCEPTUAL FRAMEWORK AND DESIGN OF A QUALIFICATION IN MUSIC TECHNOLOGY

Chapter 6

CONCLUSIONS AND RECOMMENDATIONS

Chapters 2, 3, and 4 serve as background discussion towards answering the research questions with Chapter 5 and 6 being the contribution to music education research. The following description highlights the content of the next five chapters in this study.

Chapter 2 - presents perspectives on Technology, Music Technology and South African music education. The etymology and some perspectives of the term "technology" commence the chapter. A search for a definition follows, explaining different notions of technology and music and the historical development of technology in music. The South African Music Technology context is briefly examined, coupled with the predicament facing music education. The chapter concludes by placing Music Technology within the current South African education context. The key concepts and/or recurring issues that are identified in the chapter will be used to realize the conceptual framework in Chapter 5.

Chapter 3 -   reviews literature in technology and Music Technology to examine and to place technology education within the broader context of education. An analysis of Music Technology trends internationally follows in order to identify key issues that will guide the conceptual framework for qualification design (Chapter 5), whilst at the same time establishing areas of specialization, interdisciplinary relationships and the job market related to the field of study.

Chapter 4 -   presents an overview of the current South African education structure, outcomes-based education, and curriculum, and their implications for qualification design. In this chapter, concepts and recurring issues related to Music Technology are identified. These concepts and issues form the basis for the conceptual framework in the next chapter.

Chapter 5 -   provides a list of the concepts identified in previous chapters and locates these within a framework. Only the key concepts that impact on qualification design from the field of Music Technology and those relating to education policy are mapped. The conceptual framework provides a foundation for the design of a new qualification. The qualification design is then positioned within a holistic curriculum development model showing the relationship between the three levels (qualification design, learning programme development and learning programme implementation). Using the conceptual framework, and the curriculum development model a Certificate in Music Technology is designed.

Chapter 6 -   deals with the conclusions and recommendations of this study. The conclusions highlight certain findings that answer the main research question and sub-questions. Recommendations as to how these findings could be addressed conclude this study.

Appendices -   list the subsidiary information with regard to the actual questions asked in the interviews in both questionnaires, present an overview of the career possibilities within the South African music industry sector and finally tabulate all of the recurring concepts/issues that have been identified in this study.