SELF-EFFICACY AND THE RECOGNITION OF PRIOR LEARNING

by

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Submitted in fulfilment of the requirements for the degree of

Magister Educationis

in the Faculty of Education at the Nelson Mandela Metropolitan University

November 2007

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ABSTRACT

The Recognition of Prior Learning (RPL), a mechanism grounded in the educational transformational policies of the African National Congress to redress the historical legacy of Apartheid, is a relatively new (and often contested) concept in South Africa. This research endeavors to investigate the effect of a module, which forms part of a B.Ed (upgrade) programme and is based on the processes and principles of RPL, on students’ (in-service teachers’) self-efficacy and their skills in terms of the development and execution of work schedules and lesson plans (the RPL-focus of the module). The methodology includes the gathering of quantitative and qualitative data through the administering of pre- and post- self-efficacy questionnaires, assessment of the portfolios of evidence produced by the students, and the feedback obtained from the focus-group interviews. The data indicate a statistically significant improvement in the participating students’ self-efficacy and draw attention to the negative issue of context in previously disadvantaged South African schools. The significance of this research lies not only in the interrogation of an innovative approach to dealing with RPL issues in an academic programme, and its possible influence on teacher self-efficacy, but also in its contribution to the academic debate about the RPL process which is currently taking place both locally and internationally.
ACKNOWLEDGEMENTS

I should like to acknowledge the contributions of all those people who helped to make this research possible:

- Professor Paul Webb, Director of the Faculty of Education’s Research and Technology Unit at the Nelson Mandela Metropolitan University, for his unstinting support and belief in me at a time when I was experiencing some serious efficacy problems of my own. Paul knows how important my journey has been and I want to thank him for sharing this distance with me. He knew when to push hard and when to prod gently. I am hugely indebted to him for everything he has done for me.

- Mr Gary Sharp, lecturer in the Department of Statistics at the Nelson Mandela Metropolitan University for his invaluable input in the statistical analysis of the data presented by this research.

- Mr Leslie Meiring, friend and colleague, who offered to read the final document and made an invaluable contribution.

- All the Centre Managers and Tutors who administer and deliver the Module PSPL201 at the various NMMU off-campus centres, for their assistance regarding the completion of the questionnaires and the collection of the research data.

- The courageous students who study under difficult circumstances and often teach under the most atrocious conditions. A special word of appreciation to
the students who participated in the interviews, some of whom travelled great
distances especially to meet with me.

• Ms Gizela de Klerk, administrative assistant in the Faculty of Education who
spent many hours typing the qualitative responses from the students’ portfolios
of evidence.

• My wife, Nettie, for also understanding the importance of this work and for
providing me with the space … baie dankie!
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1. INTRODUCTION

There has been significant debate over whether the process of the Recognition of Prior Learning (RPL) in South Africa should be for access or for credit (Castle & Attwood, 2001; Moll & Welsh, 2004), but little has been said about the possible impact generated by the RPL process on the self-efficacy of educators, and the possible developmental opportunities that may ensue from the process of gathering evidence for the formal recognition of prior or experiential learning, whether it is for accreditation or for access.

Some researchers in the field of RPL, however, do question whether a mass access mechanism such as the RPL methods used in the South African context, undermines its individual developmental dimensions, e.g. Moll and Welsh (2004), who note that:

RPL is a mechanism to recognise and facilitate ongoing individual development. Our contention is that when it is conducted as if it were a mass access mechanism, it substantially loses this potential.


This statement suggests the possibility of developmental-opportunity dimensions in the RPL process such as new knowledge and greater self-efficacy. As such, in this study I research the extent to which the proscribed strategies used for the recognition of prior learning for credit in the module PSPL201 of the part-time B.Ed...
(upgrade) programme at the Nelson Mandela Metropolitan University (NMMU) impacts on the self-efficacy and the professional development (with regard to two critical teacher functions) of a sample of in-service Senior Phase (SP) and Further Education and Training (FET) Science and Mathematics teachers. The two critical teacher functions which form the RPL focus area in this study are the development and the execution of Work Schedules and Lesson Plans. The module requires the teachers to provide, on three separate occasions, evidence of their competence in these areas and this study investigates the possible influence the strategy may have on the students in terms of improved self-efficacy and possible learning opportunities created.

2. BACKGROUND

The Recognition of Prior Learning is a relatively new concept on the South African educational landscape, and is rooted in the South African Qualifications Authority (SAQA) policy for RPL, which was adopted on 12 June 2002 (Breier & Burness, 2003). RPL is seen as having “a limited history of implementation in South African education and, as a quick scan of available research illustrates, an equally limited research history.” (Moll & Welsh, 2004:5)

Further evidence of the newness of the concept is the fact that many tertiary institutions were grappling, until very recently, with the formulation of policy in this regard (Breier & Burness, 2003). In 2003 six institutions in South Africa had policy documents on RPL and a further five had drafts, which represented only about one third of the tertiary institutions in the country at the time (Breier & Burness, 2003). Furthermore, research has indicated that not all tertiary institutions approach the RPL process in the same manner (Breier & Burness, 2003). On the one hand, there is evidence of a ‘technical or market perspective’ in which prior learning is matched
against specific outcomes, a clear access approach. The other is a ‘liberal humanist perspective’ where the focus is on portfolio development for generic rather than specific outcomes (Breier & Burness, 2003). Osman, cited in Volbrecht, Tisani, Hendriks & Ralphs, (2005:19), categorises three models within which different tertiary institutions operate: the credit exchange model (access), the developmental model (accreditation) and the transformational model (accreditation).

In the credit-exchange model, prior (experiential) learning is measured against the specific outcomes of the qualification offered. In the South African context, where the development (by means of improving the qualifications) of the teaching corps is a national priority, this is – by its very nature – the model of choice. The developmental model leads students to “the knowledge and learning conventions of the academy” (Volbrecht et al., 2005:21). In the transformational model, the focus is on “equity, justice and social transformation” (Volbrecht et al., 2005:21). It is clearly about providing accreditation for a broad range of educators.

Against this background it is important, when addressing the questions posed in this study, to understand the particular nature of the RPL assessment as it is conducted through the PSPL201 module of the B.Ed (upgrade) programme offered by the NMMU. This module forms one of three RPL modules to which the student is exposed during the three-year B.Ed (upgrade) learning programme. In the first module, PSPL101, an assessment is made of the student’s prior knowledge regarding computer literacy and its application in the classroom. In the third module, PSPL301, the student’s skills relating to learning and teaching strategies in the mathematics and science classroom is assessed. The focus point of this study is PSPL201, which assesses the student’s ability to design effective Work Schedules and Lesson Plans.
3. THE MODULE AND INTERVENTION

The module outcome of PSPL201 is: “The production of a portfolio of evidence that will convince the assessor that the student is able to plan work schedules and design and implement lesson plans” (Science, Mathematics and Technology Education, 2006:1). The outcome implies both an access and an accreditation model. Access, in that it provides the student with access to further study (at Honours level). Accreditation, as it also improves the student’s REQV level and consequently her/his status in terms of the salary (s)he earns.

The PSPL201 RPL module utilises a variety of approaches. Firstly, the student is required to produce evidence – working from his/her prior knowledge and classroom experience – a work schedule and a lesson plan, which is handed in and assessed against a rubric (Appendix A). The student is then engaged in contact sessions focusing on feedback of the initial task and guidance in best practice. Based on the feedback, the student is required to repeat the task, employing the new knowledge gained. This new knowledge must be discussed with a peer assessor, before the lesson is taught. A self-assessment rubric is provided. A second lesson is planned and taught in the presence of a peer assessor. A peer-assessment rubric is provided. All the data is collated in a portfolio, which has to be submitted for assessment. A rubric is provided as pre-reading for the assessment of the portfolio, so that the student has a clear understanding of the outcomes required. The student is also provided with guidelines on RPL, Developing Learning Programmes and Developing Quality lesson plans.
The study material for PSPL201 provides the following process outline to the student:

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Attend introductory contact session</td>
</tr>
<tr>
<td>2</td>
<td>Complete task on Work Schedules and Lesson Plans and hand in before the second contact session</td>
</tr>
<tr>
<td>3</td>
<td>Attend second contact session for feedback on task</td>
</tr>
<tr>
<td>4</td>
<td>Design work schedule and lesson plans to teach to your class</td>
</tr>
<tr>
<td>5</td>
<td>Discuss work schedule with HoD or another peer teacher in your learning area</td>
</tr>
<tr>
<td>6</td>
<td>Teach your first lesson plan to your class and self-evaluate your lesson presentation</td>
</tr>
<tr>
<td>7</td>
<td>Make necessary amendments to your second lesson plan as suggested by your self-evaluation (Step 6)</td>
</tr>
<tr>
<td>8</td>
<td>Arrange date and time with HoD or Principal to observe you teaching your second lesson</td>
</tr>
<tr>
<td>9</td>
<td>Teach your second lesson plan to your class while being observed and evaluated by your HoD or Principal</td>
</tr>
<tr>
<td>10</td>
<td>Collate all evidence into a portfolio using your portfolio checklist</td>
</tr>
<tr>
<td>11</td>
<td>Hand in portfolio by due date set by your tutor</td>
</tr>
</tbody>
</table>

(Science, Mathematics and Technology Education, 2006:3)
When considering the approach taken in the PSPL201 module the question arises: does the course design have a positive impact on the students’ self-efficacy and does it contribute to the development of the students (teachers) in terms of their professional competence?

4. RESEARCH QUESTION

The central question in this study is: Can a process of generating evidence by teachers for recognition of prior learning effect a change in the sense of self-efficacy of the sample of teachers as a result of the PSPL201 module intervention?

In order to answer this question, I will be looking at four subordinate questions, which are:

- What was the sample of the teachers’ level of self-efficacy in terms of developing and executing Work Schedules and Lesson Plans before the introduction of the recognition of prior learning evaluation strategy?

- Was there any change in these teachers’ self-efficacy in terms of developing and executing Work Schedules and Lesson Plans after going through the proscribed process for generating a portfolio of evidence?

- If there is a difference, what are the factors that have the greatest impact in producing a different level of self-efficacy?

- Is any change in self-efficacy levels related in any way to the teachers’ proficiency in terms of the skills required to develop Work Schedules and Lesson Plans?
5. **RESEARCH DESIGN**

In terms of research design, this study will make use of both qualitative and quantitative techniques when analysing the data that will be provided in the portfolios produced by the students of the B.Ed (upgrade) programme, i.e. their examples of Work Schedules and Lesson Plans, their self and peer assessment reports, questionnaires for tutors and students, etc. Further qualitative data gathering will take place by means of interviews with the students. Focus-group interviews will be conducted with a small sample of the students involved in the programme.

The efficacy of the participants, in terms of producing and executing Work Schedules and Lesson Plans, will be measured by means of an adapted questionnaire based on Riggs and Enoch (1990) *Science Teacher Efficacy Belief Instrument* (STEBI), both prior to and after taking part in the process designed for generating evidence for the RPL process.

Built into the research will be an analysis of the biographical data of all the students involved, focusing on factors such as urban/rural, age, qualifications, year’s experience, the phases in which they teach, etc. In trying to clarify and assess the impact of the PSPL201 module in the competency areas for the educators in question, i.e. the development and execution of Work Schedules and Lesson Plans, it is also important to understand the role of these contextual factors. This information will be particularly relevant when I consider the contextual factors that influence a higher degree of competence and/or improved self-efficacy, if that is indeed the finding.

This study will use a number of paper-and-pencil probes, the analysis of assignments, teacher interviews, a scan of the biographical details of the student-
participants, and focus on the outcome of approximately 12 hours of intervention during the B.Ed (upgrade) programme.

6. LOGISTICAL CHALLENGES

The research presents, demographically, quite significant logistical challenges. The B.Ed (upgrade) programme is offered to students in nine centres throughout the Eastern and Western Cape Province and KZN, viz. Port Elizabeth, Queenstown, Lusikisiki, King Williams Town, Mthatha, Kokstad, Ngcobo, George and Durban. As such, I make extensive use of the tutors/facilitators at these centres to present and gather the data in order to conclude the empirical, qualitative evaluation.

7. ETHICAL ISSUES

I also take cognisance of the ethical issues that come into play. The origin of this study is a part-time in-service B.Ed (upgrade) programme. A major part of the study includes work handed in for assessment which contributes towards the awarding of a final result for the programme. The researcher (and, by implication, the tutors who will administer many of the processes in the various centres across the province) is therefore in a position of power over the teachers. Hedges (2001), asserts that any participation in research should be voluntary and, consequently, it is essential that the teachers feel free to withdraw from participation at any stage. The participants were made fully aware that some of their work will be used for research purposes and that they will be given the opportunity to request that their work not be used. They were made aware that they can disengage from the research at any point in time.

Participants received feedback during the course of the B.Ed (upgrade) programme and the co-operation of all participants was acknowledged in a way that retained their confidentiality. Some of the research strategies required that the
teachers were identifiable by some appropriate means, so although anonymity could not be maintained in this study, confidentiality was assured.

8. SIGNIFICANCE OF THE RESEARCH

In terms of the PSPL201 module being used in the B.Ed (upgrade) programme offered by the NMMU, the significance of this research lies in the fact that it may lead to a further questioning of the module content and the manner in which the course is structured and offered. However, more importantly and in broader terms, the findings of the study will, hopefully, make a contribution to the ongoing debate about the RPL process that is currently taking place both locally and internationally.

As the momentum of the Recognition of Prior Learning in South Africa gathers pace, I believe that all who participate in delivery and contribute through research and development must ensure that they make a telling contribution to education transformation in South Africa.

In every country, experience shows that some people find personally transforming the experience of trying to articulate for themselves what they have actually learned although they did not know they had learned it. Confidence can be boosted. Aspirations can expand. Motivation for learning is often strengthened. And as the sense of self is strengthened, so the world can become a better place. Often this is referred to as the empowerment of people.

Evans, cited in Volbrecht et al., (2005:19)

I believe my research contributes to a better understanding of the dynamics of this type of empowerment.

9. OUTLINE OF THE STUDY

The research report consists of six chapters as follows. Chapter one gives a general introduction and orientation of the study, focussing on the module PSPL201 as it is offered to B.Ed (upgrade) students at the NMMU. In terms of background, the
chapter touches on the status of RPL in the South African context, and the nature of
the different offering types at South African tertiary institutions. A summary of the
module outcomes and methodology in PSPL201 is provided. This chapter also states
the research problem, why the study is conducted and clarifies various concepts and
also briefly explains the methodology adopted in the study. Finally, there is a
reference to the logistical challenges faced in this study as well as the ethical issues
involved.

Chapter two provides a literature review and theoretical framework for this
study focusing on what researchers in South Africa and abroad have to say about the
relationships between self-efficacy of teachers and the effect of self-efficacy on
teacher development generally.

Chapter three explains the methodology followed when collecting data, the
design of the questionnaires and the distribution thereof, as well as issues of the
validity and reliability of the research process and procedures. It also explains how the
follow-up interviews were conducted. This chapter is linked to the research questions
and the literature review, so that the data collected can be used later in the discussion
and recommendations of the study.

Chapter four focuses on the results obtained from the methodology used in
chapter three and the method of data analysis used. Chapter five presents a discussion
of the results obtained from the findings in the light of the literature review in chapter
two, while chapter six presents the conclusions drawn from the study, their
implications, and the recommendations that flow from these findings, as well as
recommendations for further research.
CHAPTER TWO

LITERATURE REVIEW

1. INTRODUCTION

In this chapter I firstly attempt to provide a theoretical framework by referring to the literature that underpins how the Recognition of Prior Learning (RPL) has been adopted globally as a mechanism to redress systemic or social problems. I consider how RPL acknowledges, recognises and validates knowledge and make specific reference to the South African context. I clarify the concepts and terminology used in conjunction with RPL as is currently used in South African and in international literature and interrogate the discrepancies in approach that exist regarding understandings of the purpose of RPL strategies, e.g., whether it is for access or for credit, and elucidate problems in this regard. I also provide the theoretical framework for understanding self-efficacy and related terminology and clarify the terms learning programme, work schedule, lesson plan and portfolio. Finally, I identify the focus areas that form the basis of the biographical data provided by the students.

2. RECOGNITION OF PRIOR LEARNING (RPL)

The Recognition of Prior Learning (RPL) is generally seen as having its roots in the United States of America during the 1970’s when the shift towards adult education gained prominence (Evans, 2000), but some researchers place the origin even earlier, linking the emergence of RPL to the return of US veterans who wanted universities to recognize their skills after World War Two (Harris, 2006).
Other views on the origins of RPL see the early beginnings of RPL in Honorary Doctorates which “are awarded on the basis of professional/political/social accomplishment” by tertiary institutions (Taylor, 1996:2). Those who have these doctorates bestowed upon them are assessed (and rewarded or accredited) on their performance in a specific field of endeavour and not because of a formalised academic programme they completed successfully. Harris states that: “RPL is not a totally new phenomenon in any of the above contexts”, but that it is “…the formalisation and (re)naming of pre-existing practices concerning alternative access and admissions, mature-age entry, and so on” (Harris, 2006:3).

The Recognition of Prior Learning is currently practiced in many countries all over the world. From the USA it has spread to the United Kingdom, France, Australia, Canada, Sweden, South Africa and Scandinavia (Harris, 2006). Different countries use different terms to refer to this phenomenon: South Africa and Australia refer to RPL, in the UK it is called APEL (accreditation of prior experiential learning), in the USA they talk of PLA (prior-learning assessment), in Canada it is called PLAR (prior-learning assessment and recognition) and in France and Sweden they refer to ‘validation’ and ‘validering’ respectively – a validation of knowledge (Harris, 2006:2).

When one looks at the emergence of RPL, it is important to recognize also the context in which it evolved. Michelson refers to the “differing historical moments” (Michelson, 2006:142) at which RPL emerged in different countries. In Britain she posits that RPL is based in the emergence of the country as a multicultural society and operates in tandem with the changing class base of higher education. In South Africa she sees it as a mechanism to overcome the huge wage and education gaps created by Apartheid (Michelson, 2006) and in New Zealand the focus was on backlogs in
aboriginal education (Michelson, 2006). The focus in all of the above was clearly to deal with a societal situation, which required some form of fast-tracking or, alternately, to give people who would otherwise not have access to institutions of learning the opportunity to study and attain qualifications.

2.1 The rise of Recognition of Prior Learning in South Africa

In South Africa, the concept of RPL was grounded in the educational transformational policies of the governing African National Congress as “Teacher education for Black South Africans under the Apartheid system was fragmented, unequal and of questionable quality” (Hendriks, Ralphs, Tisani & Volbrecht, 2005:2). In a position paper drafted by a government-appointed Study Team in preparation for the proposed South African Universities Vice-Chancellors’ Association (SAUVCA) Conference, RPL is presented as redressing historic inequalities through the formal recognition of existing skills and knowledge of workers and adult learners (SAUVCA Study Team, 2002). The document states that the SAQA Act of 1995 established the objectives and legal framework within which RPL was to become an integral feature of the design of all standards and qualifications registered by the Authority (SAUVCA Study Team, 2002).

Cooper, as cited in Cretchley & Castle (2001) states that trade unionists and community activists were at the forefront of the adoption of RPL as they saw it “as a tool through which a significant number of informally qualified workers could be assessed to receive better conditions of service, pay and opportunities for learning and employment” (Cretchley & Castle, 2001:490). The South African Qualifications Authority, the custodian of standards and quality assurance in South Africa requires that “people’s prior learning … be formally recognised in terms of registered qualifications and unit standards, regardless of where and how learning was attained”
(SAQA Policy Document, 2002a:2). In practice this means that a learner or employee’s non-formal and non-traditional learning can be recognised through a process of identifying what the person knows and can do, matching this knowledge, skills and experience to the specific standards and the assessment criteria of an existing qualification and then crediting the person towards that qualification. The policy document states further that certificates obtained in this manner should carry the same value as certificates obtained through the traditional manner, to ensure that there is no discrimination against RPL learners. Education and Training Quality Assurance bodies (ETQA’s) have been put in place and their primary brief is to quality assure education provisioning in their respective sectors (SAQA Policy Document, 2002b). Against this background, teachers are given the opportunity to return to learning, to complete incomplete qualifications, and to have informal competencies recognised to enable progression in their careers.

RPL also forms an important component of the National Qualifications Framework (NQF) in South Africa and it is noted by Moll & Welsh (2004) that in all sectors of the economy, the idea is that diversity of training, educational and life experiences can provide learners with the requisite knowledge and individual development which will help them to enter more advanced learning programmes while they were not able to acquire them in mainstream education. In the South African context, national policy makers – responding to the call to put a system in place that will redress the inequalities in the educational corps – opted for overseas models of integrated education and training systems (Cretchley & Castle, 2001).

The National Qualifications Framework defines RPL as “…the comparison of the previous learning of a learner howsoever obtained against the learning outcomes
required for a specified qualification, and the acceptance for purposes of qualification of that which meets the requirements” (SAQA Policy document, 2002:7).

The implementation of RPL is based on two of the 13 foundational principles contained in the NQF, viz.:

- To facilitate access to, and mobility and progression within, education, training and career paths, and
- To accelerate the redress of past unfair discrimination in education, training and employment opportunities.

2.2 **RPL as contested ground**

It must be noted that the implementation of RPL worldwide has not gone without much serious debate and questioning of the validity of this form of assessment and progression. The Australian Credit Transfer Agency, working on behalf of the Australian Qualification Framework Advisory Board, describes RPL as an assessment of the learning which a student may have gained from his or her previous study and/or work experience *outside* of formal education and training, to establish whether this learning is equivalent to that which might have been gained in the university course in which he/she wishes to enrol (Australian Qualification Framework Advisory Board, 2006). One of the major debates currently in Australian research into RPL focuses on the acceptability of this approach to the higher education sector and it is noted that “RPL has come from a competency-based training approach to assessment … most faculties in most universities do not operate a competency-based system and would, if asked, probably be puzzled by or hostile to the idea …” (Taylor, 1996:2).
The South African experience has also posed major challenges. Moll and Welsh (2004) note that RPL poses many intellectual and logistical challenges. In this paper the authors cite other researchers and highlight three areas of concern: The first is that the intensity of the debate about the implementation of RPL “…easily polarises participants, based on their vested interests” (Moll & Welsh, 2004:8). Secondly, it is a new and untested policy, and consequently there is a “lack of clarity about the nature, value and purpose of RPL” (Ralphs & Motala, 2000:3). Thirdly, “institutional reluctance and inexperience, rigid curriculum, and the absence of expertise in the assessment of experiential learning remain constraining factors for implementing RPL” (Buchler and Ralphs, 2000:2).

Osman (2006) clearly sees RPL in South Africa as a contested practice. Academics are polarised with regard to the nature of the knowledge gained through RPL processes. There are those who regard it as “a different kind of knowledge” (Osman, 2006:207). She also hints at the tardiness of tertiary institutions to implement RPL and where it “is being implemented it is for access into a learning programme rather than for credit or advanced standing within it” (Osman, 2006:207).

2.3 RPL for access or credit?

Whether the recognition of prior learning should be for access or credit is currently one of the central debates, both internationally and in South Africa. Castle and Attwood believe that “emphasis should be placed on RPL for access rather than credit, and that those resources should be channelled into opening pathways for adult learners into higher education and supporting them en route.” (Castle & Attwood, 2001:1).
Cooper (2006) believes that “against the background of the history of Apartheid (in South Africa), RPL is viewed as a central mechanism with which to address past discrimination and disadvantage, and to bring about greater equity and redress” and that RPL should not only provide access to educational opportunities for those previously excluded, but should also act as a vehicle for the recognition of “knowledge from below” (Cooper, 2006: 221). Michelson, as cited in Cooper (2006) believes that RPL should recognise and value “the expertise and wisdom that has sustained communities under the harshest of circumstances … and that finally furnished the organisational framework to defeat a deeply oppressive regime.” Also Grosnan, as cited in Cooper (2006), focuses on that “vast body of unused, wasted, suppressed, denied knowledge” that exists amongst ordinary workers (Cooper, 2006:221). Clearly, these writers are asking that RPL should move beyond just providing access; that it should also give recognition to knowledge sources other than that which has been recognised traditionally as ‘academic knowledge.’

Wheelahan (2006) also identifies two broad modes of approach to RPL. She sees it “as credit towards completion of a qualification, and also as an alternative entry mechanism to a qualification where students have not met the “normal entry criteria” (Wheelahan, 2006:241). Clearly, in South Africa there is a great need for the latter, although the former has to be the ultimate outcome towards which those responsible for the process of redressing past inequalities should be aiming.

Osman (2006:205) is concerned, however, “that RPL in practice raises personal questions for those who implement it and those who receive it.” She suggests an ‘epistemological audit’ to deal with the challenges posed in finding resonance between prior knowledge and academic knowledge and concludes that “as a tool for
equity and redress, RPL cannot be said to be currently delivering” (Osman, 2006: 217).

In the PSPL201 module, which focuses on teaching practice, the RPL component provides the student (in-service educator) with an opportunity to demonstrate his/her ability to draft Work Schedules and Lesson Plans, based on his/her prior experience. The module also requires that the student has to demonstrate an ability to organise the material to be taught in a coherent manner according to the requirements of the curriculum. The assessment of this RPL module contributes to the student’s final assessment in the overall programme and, as the successful students will be credited with a B.Ed (upgrade) degree, one can say that the RPL module focused on in this study is primarily for credit.

2.4 RPL for other purposes

Current research into RPL is more and more beginning to focus on the developmental component of the process. For example, Whittaker, Whittaker & Cleary (2006:314) suggest that “new approaches to RPL could focus on making this transformative dimension of RPL more explicit.” The underlying premise of this study is that the process adopted in the PSPL 201 module is transformative in nature and provides a positive learning experience for the participants. The European Union-funded Socrates project, which explored learners’ experiences of the RPL process in five European countries, found that participants in similar type programmes showed “increased self-awareness as a learner, increased self-confidence, and increased self-esteem.” (Whittaker et al., 2006:301). As such, this study is an attempt to investigate whether the module in question has any effect on the learners’ (in-service teachers) self-efficacy and, if so, what are the factors contributing to this change in efficacy.
3. SELF-EFFICACY

Research has shown that teachers’ beliefs in their personal efficacy have a clear impact on their teaching practice and the manner in which they relate to the education process (Pajares, 1997). Professional commitment, instructional experimentation and a willingness to use different approaches and to implement innovative ideas and methods are all linked to the teacher’s view of his/her self-efficacy (Allinder, 1994).

3.1 Theoretical foundation of self-efficacy

Albert Bandura developed a theoretical foundation of self-efficacy, which is founded in social-cognitive theory. The premise is that the assumption is that people are capable of achieving success if there is a dynamic interplay of personal, behavioural and environmental influences (Pajares, 2002). According to Bandura (1994), self-efficacy can be defined as a person’s belief about their ability to produce the levels of performance required to positively influence events that affect their lives. He believes that a strong sense of efficacy enhances accomplishments and creates a sense of well-being. He states that “People with high assurance in their capabilities approach difficult tasks as challenges to be mastered rather than as threats to be avoided … in contrast, people who doubt their capabilities shy away from difficult tasks which they view as personal threats” (Bandura, 1994:1). Support for Bandura’s work on self-efficacy, amongst others, comes from the finding of Graham and Weiner (1996: 75), namely “What cannot be disputed is Bandura’s argument that self-efficacy has been a much more consistent predictor of behaviour and behaviour change than any of the other closely related expectancy variables.”
As Bandura (1994:2) cites “mastery experiences” as the primary source of self-efficacy, and consequently also the most effective manner in which to enhance self-efficacy, it can be argued that the evaluation of self-efficacy within the context of a supportive RPL module becomes pertinent. The basis of the argument is that if individuals experience success, or judge themselves to be successful through a process of generating evidence of their prior learning, there is the distinct possibility that their level of self-efficacy will be enhanced and that they will be better equipped for further challenges. Hoy (2004) concurs with this and believes that mastery is the most important source of self-efficacy and is built on authentic accomplishments of learning in the past.

Another source of creating and strengthening self-efficacy is through “vicarious experiences provided by social models” and that operating in an environment along with peers, who are successful, greatly enhances the observer’s sense of self-efficacy (Bandura, 1994:2). Bandura also suggests that social persuasion is a powerful force in changing the way people view themselves and that verbal exhortations ensure greater and more sustained efforts on the part of individuals (Bandura, 1994).

Finally, Bandura (1994) notes that peoples’ level of self-efficacy is reliant on their “somatic and emotional states in judging their capabilities” (Bandura, 1994:2). These states include the person’s levels of anxiety, stress, arousal and fatigue. Consequently, if one is to improve a person’s self-efficacy, it is important to promote a positive mood in the person, remove stress and alter negative emotional feelings and interpretations of their own well-being. The underpinning rationale of the RPL module which is the focus of this study is that wherever possible all reasonable
attempts were made in the design phase to create a learner friendly, supportive and enabling climate for the learner.

3.2 Self-efficacy and the RPL module in this study

Efficacy beliefs have been related to the acquisition of new skills and to the performance of previously learned skills at a level of specificity not found in any of the other motivation conceptions that include an expectancy construct. The structure of the PSPL 201 module allows for these sources of self-efficacy to be utilised. During the roll-out of the module, students (in-service educators) are given three opportunities to produce lesson plans and worksheets, and to compile them in a portfolio of evidence. The first attempt is ‘blind’, i.e. there has been no intervention from the tutor/lecturer. After the first and second attempts have been assessed, suggestions are made to improve the students’ input and they are encouraged to liaise with their peers in the further development of subsequent lesson plans and worksheets. Tracking any changes in the level of self-efficacy through this process is therefore both formative and supportive.

3.3 Teacher self-efficacy

Berman & McLaughlin, as cited in Dembo & Gibson (1985), noted that “the teacher’s sense of efficacy was positively related to the percentage of project goals achieved” by their students. Teacher self-efficacy has also been defined as “teachers’ beliefs or conviction that they can influence how well students learn, even those who may be difficult or unmotivated” (Tschannen-Moran, Woolfolk, Hoy & Hoy, 1998:2).

The Rand Corporation conducted research into teacher self-efficacy by evaluating whether teachers believed they are in control of the learning process (Armor, Conroy-Oseguera, Cox, King, Mc Donnell, Pascal, Pauly & Zellam, 1976).
In this research, they focused on Rotter’s (1966) locus of control theory, which assumed that student learning and motivation were the relevant contributors that reinforce teaching action.

Studies by Hone (1970), Mechling, Stedman and Donnelley, (1982) and by Cunningham and Blakenship (1979) indicate that teachers would rather perform tasks that they feel most competent in performing and, more that they would avoid areas where they felt less competent. It follows, therefore that feelings of teacher-competency would be likely to engender positive attitudes toward teaching specific subjects or performing specific tasks. In turn, Gusky (1988) and Midgelly, Feldhauber and Eccles (1989) have found that teacher-efficacy is correlated with student motivation and also with innovative teaching practices.

The concept of efficacy can become confusing (Wenner, 2001). Ashton and Webb (1986) distinguished between teaching efficacy and personal teaching efficacy. In effect a teacher may believe in the power of teaching to impact on learning while holding that he or she, personally, does not have the ability to exercise such power. Personal teaching efficacy highlights a specific teacher’s ability to deliver a course of action in the teaching-learning process that may be strong enough to overcome negative outside influences.

Guskey and Passaro (1993), however, found no distinction between teaching efficacy and personal or self-efficacy. They concluded that differences appear to be an internal versus external distinction and noted that teachers with high levels of efficacy were more likely to take credit for their students’ achievements and to assume responsibility for poor student performance than were teachers with lower levels of efficacy. Teachers with low levels of self-efficacy appeared to be more willing to take
credit for student success, but attributed failure to outside (contextual) factors such as home influences and poor student ability.

3.4 Task analysis and teaching competence

Henson (2001) argues that teacher-efficacy is a joint, simultaneous function of a teacher’s analysis of the teaching task and his/her assessment of personal teaching competence. Task analysis produces inferences about the difficulty of the task and what it would take for a person to be successful in this context. Considerations include such factors as the students’ abilities and motivation, appropriate instructional strategies, managerial issues, the availability and quality of instructional materials, access to technology and the physical conditions of the teaching space, etc. Contextual factors include the leadership of the principal, the climate of the school and the abilities and supportiveness of teachers in general to cope with adverse circumstances such as an unsupportive home environment or unmotivated students.

Gist and Mitchell (1992) noted that novice and experienced teachers have different encounters when faced with the analysis of the teaching task. Task analysis is most difficult for novice teachers and for those entering a new assignment, as experienced teachers are likely to rely more heavily on memories and interpretations of similar past teaching experiences (Gist & Mitchell, 1992). When novice teachers enter the teaching force, they frequently encounter a ‘reality shock’ as they confront the complexity of the teaching task, and there is a tempering of the ‘unrealistic optimism’ they held as prospective teachers (Weinstein, 1988). Studies have found declines in general teaching efficacy after the first year of teaching (Housego, 1992; Hoy & Woolfolk, 1990) and lower general teaching efficacy (GTE) of experienced compared to prospective teachers (Pigge & Marso, 1993). These changes in GTE can be interpreted as reflecting an increased sense of the difficulty of the teaching task and
a growing pessimism about the overpowering negative external constraints that can undermine the teacher’s efforts.

Teacher efficacy will be determined, in part, by the individual’s comparative judgment of whether his or her current abilities and strategies are adequate for the teaching task in question. As noted earlier, teachers can feel efficacious in one context and quite inefficacious in another. The level of perceived competence to meet the demands of a particular teaching task is what will influence functioning in that context. Whether the person believes these abilities and strategies are both fixed and immutable or can be acquired and improved through additional training and experience affects a person’s efficacy beliefs (Bandura, 1994). A teacher, who is aware of deficits in his or her capabilities in certain circumstances but has a belief about how those deficits can be addressed, will have a resilient sense of teacher efficacy (Tschannen-Moran et al., 1998).

Teacher efficacy is the teacher’s belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context (Tschannen-Moran et al., 1998). It is in making explicit the judgment of personal competence in light of an analysis of the task and situation. Both self-perception of teaching competence (including an assessment of internal resources and constraints) and beliefs about the task requirements in a particular teaching situation (including an assessment of resources and constraints external to the teacher) contribute to teacher efficacy and to the consequences that stem from efficacy beliefs. By inviting a fuller examination of the specific teaching task and context, not just the constraints facing teachers in general, but a consideration of the personal deficits as well as the competencies teachers bring to a task, a more complete picture of teachers’ self-perceptions can be drawn (Skinner, 1996).
3.5 Self-efficacy and behaviour

Nicolaidou and Philippou (2003:1) claim “a person’s behaviour and choices, when confronted with a task, is determined more by beliefs and personal theories rather than by knowledge of the specifics of the task.” The authors cite Bandura, who reaffirms the fact that “self-efficacy is a major determinant of the choices that individuals make, the effort they expend, the perseverance they exert in the face of difficulties, and the thought patterns and emotional reactions they experience” (Nicolaidou & Philippou, 2003:3).

The research that was done by Tschannen-Moran et al., (1998) suggests that student-teachers with a low sense of teacher efficacy tend to have an orientation towards control, have a pessimistic view on students’ motivation, rely on strict classroom regulations, extrinsic rewards and punishment to make students study. Tschannen-Moran et al., (1998) also suggest that novice teachers who had a high sense of teacher efficacy found greater satisfaction in teaching and gave higher ratings for the support they had received than those who did not.

3.6 Measurement of teacher self-efficacy

Teacher efficacy has been defined as both context and subject matter specific (Tschannen-Moran et al., 1998). A teacher may feel very competent in one area of study or when working with one kind of student, and feel less able in other subjects or with different students. Nevertheless, a study by Ross (1992) suggests that efficacy beliefs appear to be quite stable among experienced teachers, even when they are exposed to workshops or new teaching methods.

While researchers and theorists agree that teacher efficacy is situation specific there have been questions about finding an appropriate level of specificity
(Tschannen-Moran et al., 1998). For example, is efficacy specific to teaching a subject such as mathematics, or specifically to teaching algebra, or even more specifically to teaching quadratic equations? Recognizing that many standard efficacy instruments overlook the specific teaching context, some researchers have modified the Gibson and Dembo (1984) instrument to explore teacher’s sense of efficacy within particular curriculum areas.

3.7 Development of the Teacher Efficacy Scale for subject specific measures

Gibson and Dembo (1984) developed a multi-method validity study which subsequently led to the Teacher Efficacy Scale (TES). The TES subsequently became the predominant instrument in the study of teacher efficacy, leading Ross (1992: 382) to label it a ‘standard’ instrument in the field. The TES has also served as a launching point for the development of other similar instruments; such as the subject matter specific Science Teaching Efficacy Belief Instrument (STEBI), (Riggs & Enoch, 1990). Science educators have conducted extensive research on the effects of efficacy on science teaching and learning. Riggs and Enoch (1990) developed the instrument, based on the Gibson and Dembo approach, to scientifically measure the self-efficacy of science teachers. As measured using the STEBI, teachers with a higher sense of personal science teaching efficacy reported spending more time teaching science and were more likely to spend an ample amount of time to develop the science concept being considered (Riggs & Jesunathadas, 1993). Among teachers involved in one year-long training in science education, teachers with low personal efficacy spent less time teaching science, used a text-based approach, were rated weak by site observers, made fewer positive changes in their beliefs about how children learn science, and were less likely to choose to teach science (Riggs, 1995).
The STEBI (Riggs and Enoch, 1990) instrument has 25 items on a five-point Likert scale which ranges from strongly agreed to strongly disagree. In this study this instrument has been adapted and rephrased to measure teachers’ perceptions of self-efficacy in terms of developing and executing Work Schedules and Lesson Plans in science and mathematics.

4. PLANNING TEACHING AND LEARNING

Work schedules, lesson plans and a portfolio of evidence are central to the RPL strategy developed in the PSPL201 module. In order to come to a better understanding of the terms ‘work schedules’ and ‘lesson plans’ in the South African context, one requires a closer look at the various documents produced by the National and Provincial Education Departments after 2002 that were meant to facilitate the roll-out of the new educational thrust for the country.

In 2003 the Department of Education (National) published a document called: *Revised National Curriculum Statement Grades R-9 (Schools), Teacher’s Guide for the Development of Learning Programmes.* This document sets out the basic parameters required by teachers within which they must operate within the new educational system, as promulgated within a transformed political dispensation.

Work Schedules and Lesson Plans are seated in the learning programme, which makes the latter the starting point in trying to understand the role of each of the former. It is noted by the Department of Education (National), (2003:4) that:

The Revised National Curriculum Statement Grades R-9 (Schools) will be implemented in schools by means of Learning Programmes. Learning Programmes are structured and systematic arrangements of activities that promote the attainment of Learning Outcomes and Assessment Standards for the phase. Learning Programmes ensure that all Learning Outcomes and Assessment Standards are effectively pursued and that each Learning Area is allocated its prescribed time and emphasis. Learning Programmes are based on relationships amongst outcomes and
Assessment Standards without compromising the integrity of Learning Areas.

This document further refers to the Revised National Curriculum Statement (RNCS), (Department of Education (National), 2003) which defines the terminology and indicates that learning programmes should be organised as follows:

- Planning for the whole phase. This is called a Learning Programme.
- Planning for a year and grade within a phase. This is called a Work Schedule.
- Planning for groups of linked activities or single activities. These are called Lesson Plans.

4.1 Learning programmes

A Learning Programme is a phase-long plan that provides a framework for planning, organising and managing classroom practice for each phase. It specifies the scope for teaching, learning and assessment for the phase and is a structured and systematic arrangement of activities that promote the attainment of Learning Outcomes and Assessment Standards for the Phase (Department of Education, 2003). A Learning Programme is a tool for ensuring that the Learning Outcomes for each Learning Area are effectively and comprehensively attended to in a sequential and balanced way across the phase. The Learning Programme thus interprets and sequences the Learning Outcomes and Assessment Standards as spelt out in the RNCS into planned teaching, learning and assessment activities for a phase. It spells out what core knowledge and concepts will be used in attaining the Learning Outcomes for the phase. It plans for how different contexts and local realities, like the needs of the community, school and learners, will be considered. The Learning
Programme also considers how integration within and across Learning Areas will happen, as well as what resources are available and needed to deliver teaching and learning activities. A Learning Programme will in turn, be translated into yearlong, grade-specific work schedules and shorter activity-long lesson plans.

4.2 Work Schedules and Lesson Plans

A Work Schedule is a year-long programme that shows how teaching, learning and assessment will be sequenced and paced in a particular grade. It is a delivery tool, a means of working towards the achievement of the Learning Outcomes specified in the Learning Programme, and incorporates the Assessment Standards that will be achieved in that grade.

A Lesson Plan is the next level of planning and is drawn directly from the Work Schedule. It describes concretely and in detail teaching, learning and assessment activities that are to be implemented in any given period of time (Department of Education (National), 2003). A Lesson Plan could range in duration from a single activity to a term's teaching, learning and assessment and, in terms of actual time, may last from a day to a week or a month. It includes how (i.e. teaching style, approach and methodology) teaching, learning and assessment activities are to be managed in the classroom (Department of Education (National), 2003).

4.3 Stages of planning

The Department of Education (National), (2003) also clarifies the purpose of a learning programme, work schedule and lesson plan: Learning Programmes, Work Schedules and Lesson Plans represent different stages of planning. While the team of teachers that teach in a phase develops a Learning Programme, the teachers of a particular grade within a phase develop a work schedule from the Learning
Programme. The class/Learning Area teacher, in turn, develops the lesson plans for his/her class. At each level of planning, more detail is added to that of the previous level as is described below. From the RNCS to the Learning Programme, a Learning Programme translates the RNCS into phase-long plans that detail (at a minimum):

- The sequencing of Learning Outcomes and Assessment Standards across the phase to ensure a coherent teaching, learning and assessment programme;
- The core knowledge and concepts or knowledge foci selected to be used to attain the Learning Outcomes;
- The context that ensures that teaching and learning is appropriate to the needs that exist in the community, school and classroom; and
- The time allocation and weighting given to the different Learning Outcomes and Assessment standards in the Phase.

When developing the Learning Programme teachers also need to consider:

- how integration within and across the Learning Areas will happen;
- the resources needed and those to be used when determining the teaching, learning and assessment activities; and
- any special or national events likely to be included in the school calendar.

These considerations are taken to more depth and given much more detail when planning the Work Schedule and Lesson Plans. It is suggested that a team planning by teachers approach will promote greater coherence, integration and cohesion in the Learning Programme for the Phase (Department of Education (National), 2003). Such an approach also provides for a better chance of developing
an effective framework for the development and use of Learning and Teaching Support Materials.

4.4 Navigating Learning Programmes, Work Schedules and Lesson Plans

In moving from the Learning Programme to the Work Schedule, a Work Schedule is crafted that provides the teachers in a grade with a year-long programme based on the Learning Programme. It develops on the sequencing, context, and core knowledge and concepts choices made at Learning Programme level. The teachers responsible for the Learning Programme for a particular grade within a phase will produce the work schedule for their grade group by drawing on the Learning Programme for that Phase. In addition to the detail already provided in the Learning Programme, teachers will in developing the work schedule, plan:

- The assessment programme for the year. They will need to ensure a spread of different assessment forms across the year in keeping with the assessment guidelines for each Learning Area;

- The use of resources needed; and

- Integration within and across Learning Areas.

The Lesson Plan provides detailed structure for teaching, learning and assessment activities. It could range from a single lesson to a few months of activities. It provides the day-to-day details for teaching, learning and assessment. It also enables, for example, events of major importance internationally, nationally or locally, to be incorporated in the curriculum in a structured, yet flexible way. The World Summit on Sustainable Development held in Johannesburg in 2002, national commemoration and holidays, and other examples are opportunities around which a lesson plan could be built. The Lesson Plans are designed to ensure opportunities for
learners to achieve the Learning Outcomes and Assessment Standards of that Learning Area.

The following elements should be contained in the Lesson Plan:

- Those elements already determined in the Learning Programme and work schedule, namely:
  - The Learning Outcomes and Assessment Standards,
  - The context and/or core knowledge and concepts selections for the lesson,
  - The assessment tasks to be used in the lesson,
  - The resources needed for the lessons, and
  - Integration opportunities;

- The actual dates over which the Lesson Plan will stretch;

- Conceptual links to previous and future Lesson Plans;

- Details and sequencing of the teaching, learning and assessment activities that will make up the Lesson Plan;

- Any particular teaching approach and method to be used; and

- Special and important notes regarding the needs of the learners in the class for whom the teacher is preparing the Lesson Plan.

4.5 Approaches to developing Learning Programmes, Work Schedules and Lesson Plans

Usually it is expected that individual teachers will prepare their own Learning Programmes, Work Schedules and Lesson Plans to support their teaching, learning
and assessment in their particular classrooms (Department of Education (National), 2003). However, it is notable that the Department of Education (Western Cape) has developed a comprehensive programme for the orientation of principals, school management teams, teachers and school governing bodies in terms of developing planning documents. (Department of Education (Western Cape), 2003). Information is also provided for parents as part of the Department of Education (Western Cape) strategy and in a letter to Principals of all WCED schools, Chief Directors, Directors, Heads of Sections and personnel at Head Office, the Acting Head: Education indicates, inter alia, that:

- The RNCS will be implemented via Learning Programmes. National Policy Guidelines for the development of Learning Programmes are in the process of being developed.
- The Revised NCS will undergo trials in a number of schools.
- The WCED has developed a comprehensive programme for the orientation of principals, school management teams, teachers and school governing bodies. Information for parents is included as part of the WCED strategy.
- This orientation programme will be followed by comprehensive training of teachers prior to implementation in order to provide them with an opportunity to explore fully the requirements of the Revised NCS. Teachers will also receive training in the development of Learning Programmes (DoE, 2003).

This strategy suggests that the WCED recognizes the complexity and difficulties involved in generating these documents. This background suggests that it can reasonably be assumed that it is both important and profitable for in-service teachers participating in this study (as is probably the case with all teachers) to be
given the opportunity to hone the skills required to understand, develop and deliver effective curriculum planning documents for use in their classrooms. It is this assumption that provided the rationale for, and which gave direction to the development of, the strategy used in the RPL module under consideration.

4.6 Portfolios of evidence

The PSPL201 module requires that the student produces a portfolio of evidence that will convince the assessor that she/he is able to plan work schedules and design and implement lesson plans. The National Protocol on Assessment for Schools in the General and Further Education and Training Band (grades R–12) was published on October 2005 and defines a teacher’s portfolio as:

A compilation and recording of all the tasks for school-based assessment. This means that it is a collection of all the assessment tasks, the annual Programme of Assessment, Learning Programme/Learning Area/Subject record sheets, etc.


The document further clarifies that the portfolio should contain the evidence for Work Schedules and Lesson Plans for each Learning Programme or Learning Area or Subject within her/his area of responsibility, and that it should be available on request at all times. Again, the PSPL201 module promotes and develops an understanding in this critical area of teacher delivery.

5. CONTEXTUAL FACTORS

As noted by Henson (2001), a number of factors may affect teachers practice. These include the leadership of the principal, whether the teachers are novices or veterans, the climate of the school and the abilities and supportiveness of teachers in general to cope with adverse circumstances such as an unsupportive home environment or unmotivated students. These have been referred to as ‘contextual
factors’ for the purposes of this study and refer to those aspects of the teacher’s environment over which she/he exercises little or no control. Bandura (1986, 1997) suggests that behaviour, cognitive and other personal factors, *and the environment* interact to influence each other. It is the impact of these external factors on the self-efficacy of educators that I also wish to explore, i.e., to determine if these factors have any impact (either positive or negative) on the development of teacher self-efficacy via the RPL process.

6. SUMMARY

In this chapter I provided an overview of the literature and theoretical framework. The literature reviewed includes how the recognition of prior learning has developed historically in adult education internationally and more specifically in South Africa as attempts to redress historical and (more often) social backlogs. I focus also on how the national government in South Africa has – through legislation and the South African Qualifications Authority – implemented the process, and the problems encountered in its roll-out in this country and make reference to the fact that tertiary institutions appear to struggle with the concept of RPL in their context, and whether it should be for access or for credit.

I focussed on the terminology used in this research and I have clarified the concept of self-efficacy both in general and specific terms, and elaborate on its theoretical foundation. I then linked this theoretical foundation to the RPL module (PSPL201) which forms the basis of this research study. By referring to the official documentation from the National and Provincial Education Departments, I clarified terms such as work schedules, lesson plans and portfolios, which are the competencies focused on in the RPL module. In the next chapter, I explain the research methodology I employed.
CHAPTER THREE

METHODOLOGY

1. INTRODUCTION

In this chapter, I firstly scan the available research into the measurement of efficacy. This is central to my study, in which a measure is taken of the self-efficacy levels of the students enrolled for the module PSPL201 in a B.Ed (upgrade) programme offered at the NMMU. I focus specifically on the instrument to be used (Riggs & Enoch, 1990), and give a general overview of other studies in which efficacy was measured.

I then clarify the philosophical foundation and the research paradigm within which this research is situated and explain the research design. I also explain the research methods employed in this study and the philosophical basis upon which these methods were determined, and refer to some of the research literature in order to clarify why the relevant methods were chosen as appropriate for this kind of research.

I also provide a breakdown of the sample of in-service educators who participated in this study, and explain further the different types of data that were required for analysis and interpretation to elucidate those issues that form the basis of my research questions. I then focus briefly on the logistical challenges in collecting the data. The first data type is quantitative and is based on a questionnaire that evaluates the self-efficacy of the students. Further data is provided by lesson plans and work schedules. I also refer to the data I require – gathered with a questionnaire – on the biographical world in which the students live and work in an attempt to ascertain
if any of these factors are relevant in any way to efficacy scores achieved and the quality of the work schedules, lesson plans and portfolios provided by the students.

I provide information on how the data was analysed and refer specifically to the reliability and validity of the data and the findings and interpretations based on the analysis. Finally, I focus on the ethical issues that come to the fore and how they were managed.

2. MEASURING TEACHER SELF-EFFICACY AND PERFORMANCE

Three decades have now transpired since Bandura first proposed the construct of self-efficacy (Pajares, 1997). In this time “the tenets of the self-efficacy component of social cognitive theory have been widely tested in varied disciplines and settings and have received support from a growing body of findings from diverse fields.” (Pajares, 1997:1). Pajares (1997) cites a number of studies in the field of self-efficacy, e.g., on phobias (Bandura), on addiction (Marlatt, Baer & Quigley) and depression (Davis & Yates) to name but a few.

Ashton and Webb (1986) found that the efficacy beliefs of teachers are related to their instructional practices and to various student outcomes. This relationship was expanded on by James, (cited in Pajares, 1997) who found that individuals choose to attend primarily to experience and that their personal proficiency also helps to determine how much effort they will expend on an activity, and how long they will persevere when confronting obstacles. This means that the higher the sense of efficacy, the greater the sense of effort, persistence and resilience (James, cited in Pajares, 1997). This finding is of particular relevance in my study, as I explore the link between the self-efficacy and work performance in terms of the quality of the students’ lesson plans, work schedules and portfolios. Pajares concludes that research
findings over an extended period of time have strengthened Bandura’s claim that self-efficacy beliefs play an influential role in human discourse.” (Pajares, 1997:27).

The possible effects of the contexts in which the teachers find themselves on their self-efficacy and ability to design and implement Work Schedules and Lesson Plans, as well as their own interpretations of the effect of RPL process used in this study on these aspects of their behaviour, are also investigated.

2.1 Measuring self-efficacy

The self-efficacy instrument that was employed in this study is based on the self-efficacy questionnaire designed by Riggs and Enoch (1990), which was originally designed to measure the self-efficacy of science educators. Called the Science Teaching Efficacy Belief Instrument (STEBI), (Riggs & Enoch, 1990), the questionnaire was based on the Teacher Efficacy Scale (TES), designed by Gibson and Dembo (1984). The TES questionnaire was labelled at that time the “standard” in the field of efficacy measurement (Ross, 1992:382).

The STEBI questionnaire was, for the purpose of this study, adapted to measure the self-efficacy of mathematics and science educators with respect to a specific educational function: that of planning, drafting and implementing Work Schedules and Lesson Plans (Appendix B). The pre- and post-intervention STEBI data were triangulated with the students’ performance in terms of preparing work schedules, lesson plans, the quality of their portfolios and the interpretive outcomes of the interviews conducted.
2.2 Measuring teacher performance in PSPL201

In this study I am researching the possible effects of a particular RPL strategy in module PSPL201 on teacher self-efficacy. The RPL strategy entails, amongst others, the development of Work Schedules and Lesson Plans, and compiling them in a portfolio of evidence. In order to generate the qualitative and quantitative data that is necessary to enable me to answer the research questions, I will use a mixed methods approach. Interpretation of the qualitative and quantitative data will take place within the framework of the interpretive paradigm, and will be analysed statistically. This analysis will therefore bring some aspects of a positivistic approach to the study.

In order to determine if the process of generating evidence by teachers for RPL affords further learning opportunities (in the competency area being assessed) and if their self-efficacy is enhanced, I require access to the ‘evidence’ that the teachers have to produce before and during the contact sessions, i.e. Work Schedules and Lesson Plans. The programme requires the teachers to repeat the process three times, once before any input from the module presenter, a second mid-way through and a third on conclusion of the programme. I believe that a detailed analysis of the Work Schedules and Lesson Plans will provide quantitative and qualitative evidence against which I can test the question. I will be able to determine if the process of RPL can be a learning strategy in itself. This would imply an objectivist or positivist approach.

2.3 Measuring the effect of context

The third and fourth subsidiary questions, and the manner in which they are researched, will clarify my approach. In order to determine what the contextual
factors are that have the greatest impact in producing a changed degree of competence, the teachers are required to complete a questionnaire in which they provide information regarding the life and teaching world in which they operate (Appendix C). This will give me a variety of focus areas – 18 in total – which may or may not be relevant to their efficacy or efficiency. The statistical analysis of the contextual factors can be seen as focusing on the teacher responding to his/her natural world, while the self-efficacy questionnaire described above is an attempt to illuminate how the teacher sees him/herself as the initiator of the change.

2.4 Measuring teacher perceptions of the process

An important component of this study is the interviews which will be conducted with a small convenience sample of teachers. The interviews will provide a qualitative measure of the students’ responses in terms of their own self-efficacy levels and will elucidate the confidence (or lack thereof) with which they interact with their Work Schedules and Lesson Plans.

3. RESEARCH PARADIGMS

When considering the most appropriate methodological approach in any research project, it is important to first clarify the philosophical foundation or basic premise or assumption upon which the research may best be based (Cohen & Manion, 1994). These authors identify two broad approaches which influence the selection of a methodological approach:

Investigators adopting an objectivist (or positivist) approach to the social world and who treat it like the world of natural phenomena as being hard, real and external to the individual will choose from a range of traditional options – surveys, experiments, and the like. Others favouring the more subjectivist (or anti-positivist) approach and who view the social world as being of a much softer, personal and humanly-created kind will select from a comparable range of recent and emerging techniques – account, participant observation and personal constructs, for example.
Positivist research requires that a hypothesis is formulated before the data collection process commences; consequently, the data is used to prove or dispel the hypothesis (Easterby-Smith, Thorpe & Lowe, 1994).

Jain (1998), in considering concepts and methods of research, gives a brief historical view on research paradigms. He notes that Wilhelm Dilthey, a 19th century sociologist, “believed that humans had free will, and thus no-one can predict their actions and generalize about them.” (Jain, 1998:3). Jain continues to say that should this be the research approach philosophically, then studies in the social sciences would be precluded from being effectively researched. On the other extreme, Jain identifies Emile Durkheim, who believed that social phenomena are “orderly and can be generalized … that phenomena adhere to underlying social laws, just as physical phenomena follow physical laws” (Jain, 1998:3). According to Durkheim then, the subject matter represents the only difference between physical science and social science. In this comparison, one finds the two broad philosophical approaches, viz. positivism and subjectivism. Jain (1998) concludes the historical picture by referring to Max Weber, who chose the intermediate path in trying to define a research approach.

Weber believed that “social phenomena were not merely determined by social laws but were the product of human volitional action … (and that) … the fact that humans have free will does not mean that their actions are random and entirely unpredictable.” (Jain, 1998:4). This would indicate that a researcher may, in the course of a research exercise, adopt methods from either the physical or the social sciences in conjunction with each other, applying the former (positivist) approach when encountering measurable, quantifiable factors and the latter (subjectivist)
approach in situations that may only be observed, described and interpreted, and are not easily empirically measured (Jain, 1998).

Finally, the interpretative research paradigm is one in which a researcher sets out to understand the subject through their interpretation of the world around them, which gives rise to what is referred to as ‘grounded theory’ (Glaser and Strauss, 1967). By focusing on the self-efficacy of the sample of teachers as a result of the PSPL201 module intervention, as determined by a survey using the Science Teacher Efficacy Belief Instrument, before and after the RPL module intervention, looking at teacher generated artefact (their portfolios) and by interviewing them, it can be said that the approach in this study straddles the positivist and subjectivist approaches, and also incorporates aspects of the interpretive paradigm.

4. **RESEARCH DESIGN**

In terms of research design, this study makes use of both qualitative and quantitative techniques when analysing the data that was provided in the portfolios of evidence produced by the students of the B.Ed (upgrade) programme, i.e. the examples of their Work Schedules and Lesson Plans, their self- and peer-assessment reports, and the questionnaires. Further qualitative data gathering took place by means of interviews with the students. The self-efficacy of the participants, in terms of producing and executing Work Schedules and Lesson Plans, was measured by means of an adapted questionnaire based on Riggs and Enoch (1990) Science Teacher Efficacy Belief Instrument, both prior to and after taking part in the process designed for generating evidence for the RPL process. An analysis of the biographical data of all the students involved, focusing on factors such as urban/rural, age, qualifications, year’s teaching experience, the phases in which they teach, etc., was undertaken in an
attempt to clarify whether these factors had any statistically significant relationship with the self-efficacy and competency aspects of the study.

This study used questionnaire analysis, inspection of written work, teacher interviews, and approximately 12 hours of intervention during the B.Ed (upgrade) programme.

5. METHODOLOGY

As a starting point, the Science Teacher Efficacy Belief Instrument (STEBI) designed by Riggs and Enoch (1990) was administered to the students involved in the B.Ed (upgrade) programme during the first contact session of the module PSPL201. The purpose of this was to measure the various levels of self-efficacy of the educators involved in the study prior to their exposure to the content of the module and the (intervention) processes that form part of the RPL component of this module. In order to answer the research question: Can a process of generating evidence by teachers for the recognition of prior learning effect a change in the self-efficacy of the sample of teachers as a result of the PSPL201 module intervention, it is necessary to make this initial measurement. A follow-up assessment was done when the instrument was again administered after the completion of the module. Results from these two measurements will give an indication if the process (of generating Work Schedules and Lesson Plans) has impacted positively on the teachers’ self-efficacy. The findings from these data were supplemented by interviews with a random selection of students.

A secondary line of investigation is related to the possible role played by the contextual factors which may influence the level of self-efficacy. A questionnaire was administered, gathering biographical data about each of the students. Factors such as gender, age, educational environment and experience are included (Appendix C).
Finally, I ask if further learning opportunities in the competency area being assessed are generated as a result of the intervention? In other words, is it possible that the process of RPL can be a learning strategy in itself? In order to ascertain this, a sample of Work Schedules and Lesson Plans, incorporated into a teacher portfolio, were assessed and the teachers were interviewed.

6. DATA GATHERING INSTRUMENTS

As noted above, the data gathering instruments and sources included questionnaires, teacher portfolios and interview protocols.

6.1 Questionnaires

During the course of this study I utilised two questionnaires: firstly an adapted version of the Science Teaching Efficacy Belief Instrument - STEBI (Riggs & Enoch, 1990) and a self-designed questionnaire probing the biographical details of the respondents.

The STEBI is a 16-item questionnaire to which the respondents must respond on a five-point Likert scale, ranging from SA – strongly agree to A – agree, U – uncertain, D – disagree and SD – strongly disagree. The items have been adapted to focus on the development of Work Schedules and Lesson Plans. The students’ responses to the 16 items provide a measure of their self-efficacy in terms of the development of the Work Schedules and Lesson Plans.

It should be noted that the questionnaire used in this research was not tested with a pilot group of teachers before being printed and distributed.
6.2 Interview schedules

In order to collect qualitative data I conducted a number of interviews with students. Cannell and Kahn, as cited in Cohen and Manion (1994:271) define the interview as “a two person conversation initiated by the interviewer for the specific purpose of obtaining research-relevant information, and focussed by him on content specified by research objectives of systematic description, prediction or explanation.” Interviews are also seen as “reactive situations of social interaction in which discussions about personal behaviour and opinions with a stranger are influenced by the interview process itself.” (Nardi, 2006:70). While the former provides a definition, the latter already gives an indication of one of the factors that influence the interviewee. Other authors also warn of the factors that could negatively impact on the interview process, and therefore on the reliability and validity of data gathered in this manner (Bless, Higson-Smith & Kagee, 2006, Cohen & Manion, 1994). Factors generally referred to in the literature are linked to the time that the interview takes place, the venue in which it takes place, the role that the interviewer plays during the interview, adapting to the language and vocabulary of the interviewee, creating an appropriate environment and the nature of the questions being asked. Cognisance was taken of these issues in planning the interview process and was generally adopted.

I chose, in view of the above, the focus group approach. In this approach a group of students are gathered and a group discussion is held. In order to facilitate the process, I drafted an interview schedule, listing the questions I wished to ask (Appendix D). I chose not to ask a list of questions, but rather to engage the group in a conversation, (albeit a conversation guided by a set of pre-determined questions), ensuring that all the required areas were covered. It was important for me to ensure that the group was relaxed and that they had bought into both my integrity and the
need for honest, accurate responses, hence the opening indication that there are no correct or incorrect responses, but only their feelings, opinions and comments.

Cohen & Manion (1994) describe four kinds of interviews: the interview may be structured, unstructured, non-directive or focussed. A structured interview is planned in detail beforehand and there is no deviation from the original script. The unstructured interview provides the interviewer with more freedom. Although the content focuses on the research objectives, the sequence, wording and flow are in the hands of the interviewer. This was the approach I adopted for the interviews as this non-directive approach allows the interviewee freedom to respond to minimal stimuli (Cohen & Manion, 1994).

6.3 Teachers’ written work

A sample of the portfolios containing the Work Schedules and Lesson Plans developed by the students were collected and assessed in order to give an indication of the teachers’ abilities and how they relate to their self-efficacy as indicated by their scores on the STEBI self-efficacy scale. If their self-efficacy measurement is an indication of their level of functioning as suggested by Pajares (1997), then it would be expected that there would be a correlation between the quality of the Work Schedules and Lesson Plans and their STEBI scores. However, if this is not the case, it would lend support to Ernest (1989) and Lerman’s (2002) stance that that there is not always a correlation between the beliefs teachers verbalize and their practice in the classroom.

7. SAMPLE

In survey sampling, Cohen & Manion (1994) differentiate between probability and non-probability sampling. Under the banner of probability sampling, the authors refer to five different types of sampling: simple random sampling, systematic
sampling, stratified sampling, cluster sampling and stage sampling. As examples of non-probability sampling, they highlight the following: convenience sampling, quota sampling, purposive sampling, dimensional sampling and snowball sampling. Nowak refers to this kind of sampling as “judgement sampling” (Nowak, 1977:297). He cites this type of sampling as “based on purposive selection of the studied cases due to some of their characteristics …” (Nowak, 1977:297).

“Small-scale surveys often resort to the use of non-probability samples because … (they) … prove perfectly adequate where researchers do not intend to generalize their findings beyond the sample in question …” (Cohen & Manion, 1994:88). Furthermore, in “purposive sampling, researchers handpick the cases to be included in the sample on the basis of their judgement of their typicality … (so that they can) … build up a sample that is satisfactory to their specific needs.” (Cohen & Manion, 1994:89).

From the above it is clear that the sample used in this research falls into the non-probability, purposive type. The sample was chosen with the express purpose of testing the self-efficacy levels of a specific group involved in the module PSPL201, where students are enrolled in the B.Ed (upgrade) programme offered by the NMMU.

For the purposes of this study, I looked at the biographical factors (age, years’ experience, grade levels taught, etc.) in order to determine if they have any influence on the various/varying levels of self-efficacy of the educators in question. This cohort of students was first registered in year one of the three-year course in 2005. The RPL component being investigated forms part of the second-year curriculum.
Generally, the student body consists of rural, black educators who, because of the (often deep) rural environment in which most of them find themselves, are usually exposed to poor training and operate in a challenging teaching environment.

The total number of students involved in the programme was 188. In the table below, a summary is provided of the spread of the students throughout the different NMMU on- and off-campus sites. In the headings of the table, the ‘No students’ refers to the total number of students in each centre, the ‘self-efficacy pre-test’ is the initial measurement of the students’ self-efficacy completed, while ‘self-efficacy post-test’ is the number who completed the measurement of their self-efficacy after the intervention. ‘Biographical’ refers to the number of students who completed the biographical details questionnaire, while ‘Permission” indicates the number of students who gave permission for their work to be used in this study.

Table 3.1: Student numbers at the different centres, who participated in the module, wrote the pre- and post-tests, filled in the biographical questionnaire, and gave permission for their data to be used in the research study.

<table>
<thead>
<tr>
<th>Centre</th>
<th>No students</th>
<th>Self-Efficacy</th>
<th>Biographical</th>
<th>Permission</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre-test</td>
<td>post-test</td>
<td></td>
</tr>
<tr>
<td>Ngcobo</td>
<td>17</td>
<td>17</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>Durban</td>
<td>35</td>
<td>28</td>
<td>14</td>
<td>27</td>
</tr>
<tr>
<td>King</td>
<td>22</td>
<td>19</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Lusikisiki</td>
<td>20</td>
<td>19</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td>Mthatha</td>
<td>27</td>
<td>22</td>
<td>26</td>
<td>22</td>
</tr>
<tr>
<td>Port Elizabeth</td>
<td>37</td>
<td>27</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Queenstown</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Kokstad</td>
<td>15</td>
<td>15</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>George</td>
<td>9</td>
<td>9</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>188</td>
<td>161</td>
<td>134</td>
<td>150</td>
</tr>
</tbody>
</table>

From the above table, it is clear that not all students in the programme, to whom I shall refer as the “population” of this study (Bless et al., 2006:98, Jain, 1998:167), participated in all aspects of this study. This is for a variety of reasons:
students were absent when data were collected, some dropped out after the initial self-efficacy measurement was taken and some only joined the class after the initial measurement was conducted. Some students also provided incorrect student numbers, which invalidated their responses. It should be noted that some students also chose not to be a part of this study and were not included. However, “it is possible to reach accurate conclusions by examining only a portion of the total group” (Bless et al., 2006: 97).

8. DATA COLLECTION

The data were collected from all the centres where the module was offered, viz. Ngcobo, Mthatha, Lusikisiki, Kokstad, Port Elizabeth, Queenstown and King William’s Town in the Eastern Cape, Durban in Kwazulu-Natal, and George in the Western Cape. The vastness of this area necessitated the involvement of the various Programme Co-ordinators and administrators, Centre Managers and Tutors. Use was made of couriers as well as NMMU staff who travelled to these areas to deliver the questionnaires and to collect and return the data.

The initial self-efficacy test was conducted at the first contact session attended by the students. At this point the students also completed the questionnaire in which they provide their biographical details, which is also required for this study. The students were provided with a letter (Appendix E), explaining the purpose of the research and requesting permission to use the information gathered from them for this study. The students responded to the request, using the reply slip attached to the letter. As part of the latter, students were also asked if they would be available for a class visit and/or interview. For logistical reasons, no class visits were possible. The Work Schedules and Lesson Plans that the students had to complete as part of the PSPL201 module were collected and studied at various stages during the year.
9. **DATA ANALYSIS**

The self-efficacy data were subjected to statistical analysis in order to provide descriptive statistics. These data were then subjected to factor analysis and grouped in clusters. The data within these clusters were subjected to t-tests and analysis of covariance (ANCOVA) in order to provide inferential statistics. Reliability scores were tested using the Cronbach Alpha (∝) technique. The teachers’ portfolios were analysed by inspection using the rubrics provided within the module booklet.

The interview transcripts were coded via an inductive process that involved breaking up and categorizing text to form descriptions and broad themes (Creswell, 2005). During this inductive and descriptive analysis, the steps of Tesch, as listed in Creswell (2005:238), were used. Briefly, these steps involved reading all the transcripts several times and making notes of any themes which emerged; grouping similar themes together and breaking up into main theme, categories and subcategories; codes were then assigned to the themes and written next to the appropriate text to provide verbatim quotes. I then grouped together and analysed the data generated in this way.

10. **RELIABILITY AND VALIDITY**

The question regarding reliability and validity lies at the forefront of all educational research. “Reliability is the extent to which the observable (or empirical) measures that represent a theoretical concept are accurate and stable when used for the concept in several studies.” (Bless et al., 2006:149). They further posit that “reliability is concerned with consistency of measures.” (Bless et al., 2006:150). Nardi (2006) also sees reliability as consistency, and continues: “…it is the expectation that there won’t be different findings each time the measures are used, assuming that nothing has changed in what is being measured.” (Nardi, 2006:60).
Nardi (2006) defines four types of reliability. The ‘test-retest reliability’ implies that if the same test is done a number of times under the same or similar circumstances, the same or similar results should occur. ‘Parallel form and inter-item reliability’ is obtained through the use of two similar measuring instruments – should they achieve similar results/outcomes, it may be a clear indication of reliability. ‘Split-half reliability’ is, according to Nardi, obtained when items within the same measure are divided into two groups and serve as control responses. Finally, he refers to ‘inter-rater reliability’, which requires the gatherer and the interpreter of the data to agree on the terms of interpretation.

The STEBI has been used in numerous contexts, measuring self-efficacy, and has been proved to be a reliable instrument (Bleicher, 2004). This approach ensures the ‘test-retest reliability’ factor of the instrument. The STEBI – B instrument, based on the original instrument and developed to measure self-efficacy in pre-service, elementary teachers has met with similar success (Bleicher, 2004). This does indicate a degree of parallel-form reliability.

“Validity is about accuracy and whether the operationalization is correctly indicating what it’s supposed to.” (Nardi, 2006:58). When looking at the validity of an instrument, the questions that are asked are ‘what does this instrument actually measure?’ and ‘what do the results actually mean?’ (Bless et al., 2006:156). The instrument used in measuring the self-efficacy of the students, has been used in many studies and has generally been found to be reliable.

A further validation of the results obtained by the STEBI-questionnaire is added by the follow-up interviews that were conducted with students. A number of issues upon which the questionnaire focuses are tested in the interview situation. Should there be a correlation between the results of the questionnaire and the interview outcomes one
would expect it to be a clear indication of both the reliability and validity of the findings. Finally, the qualitative and quantitative analysis of the data provided by the Work Schedules and Lesson Plans produced by the students and incorporated in their portfolios, provides the possibility of triangulating findings in order to gain insight and impressions of the validity and reliability of the data obtained, while the reliability of statistical data generated are reflected in Cronbach Alpha (\(\alpha\)) scores given in chapter four.

11. ETHICAL CONSIDERATIONS

Mouton (2001) notes that people who involve themselves in research have a moral commitment to search for truth and knowledge; this, he states, should, however, not be at the expense of those who participate in the study. To this end I explained the purpose of the study and what the respondents’ obligations (input) would be in my first communication with the students. I also indicated that I required student numbers only for referencing purposes, so that I could effectively track any changes that may occur, and determine if any of the biographical factors played a role in any such change. Although I could therefore not guarantee anonymity, I would guarantee their confidentiality.

The approach was one of informed consent and students were given the choice of participating or not participating in the study. Those who declined were not included in the research. As such, those who did participate in this study were informed volunteers and they were aware that their work (developing Work Schedules and Lesson Plans) and the questionnaires they completed would be used and reported on in terms of research findings.
12. SUMMARY

I started this chapter by scanning some of the research on the measurement of self-efficacy and more specifically the role that Bandura’s cognitive theory has played in this regard. I then clarified the philosophical foundation and research paradigms of this study. I focussed in this regard, firstly, on the historical perspective and secondly gave an explanation of the research instrument used in this research. I then closed off this section by referring to my focus on the module PSPL201.

A description of the research design and methodology employed, with reference to the various instruments used in the research, including sections on questionnaires, interviews and the analysis of the students’ work, was presented after which I clarified the nature and number of the sample who participated in the research, explained the process of data collection and listed the various tests used in data analysis.

In closing I referred to the issues of the validity and reliability of the research process and procedures followed, and gave a brief exposition of the ethical considerations that underpin this study.
CHAPTER FOUR

RESULTS

1. INTRODUCTION

In this chapter I report on the quantitative data generated by the self-efficacy questionnaire (administered pre- and post-intervention) in terms of both descriptive and inferential statistics. I also report on data generated from the teacher portfolios, viz. the Work Schedules and Lesson Plans the students developed, as well as their self-, peer- and tutor-evaluation records. The data generated by the semi-structured interviews (based on and informed by the self-efficacy questionnaires) which were administered to a sample of the population of respondents, are also reported. All data were triangulated for interrogation and are discussed in chapter five within the framework provided by the literature review in chapter two.

2. QUANTITATIVE DATA

Quantitative data were generated via a five-point Lickert Scale self-efficacy questionnaire filled in by the teachers participating in this study. These data included descriptive statistics on the teachers’ gender, environment (urban or rural), phase taught (Senior, FET or other), grade taught, language in which they teach (Xhosa, English or other), subject taught (science, mathematics, both, or other), and their position in the school (teacher, head of department or higher). Other data generated were the number of learners in each school, the number of teaching staff in the school, the average class size at the school, and the average class size that the responding
teacher was required to teach. Frequency tables were drawn from these data and are shown in Appendix F.

Statistica version 7.1 was used for data processing and statistical analysis. Firstly exploratory factor analysis was used to identify the factors of the questionnaire items which clustered together and the internal reliability of these factors was calculated using Cronbach Alpha (\(\alpha\)) coefficients. Both numerical and descriptive statistics were used to illustrate results of the individual items and the identified factors. The Statistica general linear model routine was used and analysis of variance (ANOVA) and analysis of covariance (ANCOVA) procedures were used for inferential tests. ANOVA was used to identify the relationships between the dependant variable and a set of qualitative independent variables whilst ANCOVA was used to identify the relationships between the dependent variable and sets of quantitative independent variables.

The data subjected to factor analysis (Appendix G) revealed that items 5, 8, 10, 13, 14 and 16 did not cluster. It is interesting to note that these items all deal with the same content, viz. the learners’ ability to achieve (or the educators’ beliefs about their ability to influence their learners’ achievement levels), and it is possible that the respondents (educators) were struggling with issues concerning their locus of control (Rotter, 1954, 1966). There are clearly issues here that require further investigation and these issues will be addressed in the next chapter where I discuss the results.

The remaining items clustered into three groupings, viz. items 1-4, which focus on the educator’s perception of his/her own ability to develop Work Schedules and Lesson Plans; items 6, 12 and 15, which focus on the educator’s perception of his/her ability to plan and execute lesson plans and deal with learner responses, and
items 7, 9 and 11, which focus on the teachers’ perception of the learners’ performance in relation to effective planning of work schedules & lesson plans. The data generated within these clusters were subjected to t-tests and analysis of variance and co-variance (ANOVA and ANCOVA) in order to provide inferential statistics.

2.1 Descriptive statistics

Analysis of the sample of 123 teachers who responded to the questionnaire revealed that the group consisted of 72 females and 50 males, a ratio of approximately two females to each male teacher. The majority (87) taught at senior phase level (the intervention targeted senior phase teachers), 17 taught at FET level, and 17 taught at intermediate or foundation phase level, the majority (105) reported that they taught through the medium of English and were at teacher post level one (95), while 24 of the respondents held positions of Head of Department or higher. The majority of schools were rural (87), while 35 were situated in urban areas. (Where there are inconsistencies in the numbers indicated, the information was not supplied by the respondents.)

The mean, median, standard deviation and valid number of self-efficacy questionnaire returns (n) in terms of teacher related data, i.e., number of years teaching mathematics, number of years teaching science, number of years of teaching experience overall, and age of teachers, are presented in Table 4.1.
Table 4.1: Descriptive statistics of teacher related factors related to the sample of teachers who responded to the self-efficacy questionnaire

<table>
<thead>
<tr>
<th>Teacher related factors</th>
<th>mean</th>
<th>median</th>
<th>std. dev.</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of years teaching maths</td>
<td>9.6</td>
<td>10</td>
<td>7.1</td>
<td>103</td>
</tr>
<tr>
<td>Number of years teaching science</td>
<td>6</td>
<td>4</td>
<td>5.3</td>
<td>89</td>
</tr>
<tr>
<td>Total number of years teaching</td>
<td>14.2</td>
<td>13</td>
<td>7.9</td>
<td>121</td>
</tr>
<tr>
<td>Age</td>
<td>41.3</td>
<td>38</td>
<td>16.4</td>
<td>121</td>
</tr>
</tbody>
</table>

The data in Table 4.1 suggest that the teachers were more experienced in terms of teaching mathematics than they were in terms of teaching science, that more teachers taught mathematics than science, that the mean age of the teachers was approximately 40 years with a range from 24 to 56 years within one standard deviation, and that the teachers, on average, had 14 years of teaching experience. The fact that the mean and median data were similar suggests an equal spread of ages and experience on either side of the mean. The lower median than the mean for the science experience in years suggests that there are some teachers with much more experience teaching science than the grouping below the median (which is probably to be expected as the mean and median are low.) This case is marginally reversed in terms of the mathematics teachers’ experience, where the median is higher than the mean.

The mean, median, standard deviation and valid number of returns (n) in terms of learner related data, i.e., number of learners in the sampled schools, class size in the school, responding teachers’ class sizes, and the number of teachers in the school, are presented in Table 4.2.
Table 4.2: Descriptive statistics of learner/teacher related factors related to the sample of teachers who responded to the self-efficacy questionnaire

<table>
<thead>
<tr>
<th>Learner/teacher ratio factors</th>
<th>mean</th>
<th>median</th>
<th>std. dev.</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of learners in the school</td>
<td>621</td>
<td>509</td>
<td>407</td>
<td>123</td>
</tr>
<tr>
<td>Number of teachers in the school</td>
<td>18</td>
<td>14</td>
<td>11</td>
<td>123</td>
</tr>
<tr>
<td>Class size in the school</td>
<td>46</td>
<td>43</td>
<td>19</td>
<td>119</td>
</tr>
<tr>
<td>Respondent’s class size</td>
<td>47</td>
<td>42</td>
<td>23</td>
<td>119</td>
</tr>
</tbody>
</table>

The data in Table 4.2 suggest that although the mean and median size of the school in terms of learners is fairly high, viz. 621 and 509, respectively, there is a great range of school sizes (standard deviation = 407), with proportionally a number of schools with much larger numbers than there were schools with much smaller numbers than the median number of 509 learners. The responding teachers’ average class size was 47 learners, but within one standard deviation this ranged from 24 to 70 learners.

The mean pre- and post-test scores for the clustered items (questions) on the five-point self-efficacy questionnaire are presented in Table 4.3. The three clusters refer to (i) the development of Work Schedules and Lesson Plans, (ii) the planning and execution of Work Schedules and Lesson Plans and (iii) learners’ performance.

Table 4.3: Descriptive statistics of teacher pre- and post-test mean scores on the clustered items on the five-point self-efficacy questionnaire

<table>
<thead>
<tr>
<th>Clustered items (questions)</th>
<th>mean scores</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-test</td>
<td>post-test</td>
</tr>
<tr>
<td>Development related items (1-4)</td>
<td>3.56</td>
<td>4.15</td>
</tr>
<tr>
<td>Execution related items (6, 12 and 15)</td>
<td>4.03</td>
<td>4.29</td>
</tr>
<tr>
<td>Learner performance items (7, 9 and 11)</td>
<td>3.98</td>
<td>4.13</td>
</tr>
</tbody>
</table>
Table 4.3 reveals an increase in self-efficacy in all three of the clustered items and inspection of all individual questions making up the clustered items followed the same pattern. It should also be noted that these items were not deliberately clustered by the researcher, but that they clustered as a statistical consequence of the data analysis.

The reliability of the data presented in Tables 4.1, 4.2 and 4.3 were calculated using Cronbach Alpha (α) scores for the pre- and post-tests for each of the three sets of clustered items. The Cronbach Alpha (α) scores are presented in table 4.4.

Table 4.4: The Cronbach Alpha (α) scores of teacher pre- and post-test data for the clustered items on the five-point self-efficacy questionnaire

<table>
<thead>
<tr>
<th>Clustered items (questions)</th>
<th>Cronbach Alpha (α) scores</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-test</td>
<td>post-test</td>
</tr>
<tr>
<td>Development related items (1-4)</td>
<td>0.79</td>
<td>0.79</td>
</tr>
<tr>
<td>Execution related items (6, 12 and 15)</td>
<td>0.39</td>
<td>0.51</td>
</tr>
<tr>
<td>Learner performance items (7, 9 and 11)</td>
<td>0.42</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Cronbach Alpha (α) scores of 0.7 to 1 indicate that the data is highly reliable, while scores between less than 0.7 and greater than 0.5 are considered to be in the ‘satisfactorily to good’ range (Nunnaly, 1978) for the data being tested. The Cronbach Alpha (α) scores suggest that the post-test item data shift towards greater reliability (less variance) from the pre-test scores, with only the pre-test development related items being highly reliable. The reliability of the execution related and learner performance pre-test items are less than ‘satisfactorily’ reliable, something that can be expected from respondents who are uncertain of their responses.
2.2 Self-efficacy t-tests

The self-efficacy data were subjected to t-tests and the t statistics and probability values are presented in Table 4.5.

Table 4.5: The t-test scores and probability values of teacher pre- and post-test data for the clustered items on the five-point self-efficacy questionnaire (n = 123; df = 122)

<table>
<thead>
<tr>
<th>Clustered items (questions)</th>
<th>mean scores</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development related items (1-4)</td>
<td>3.56</td>
<td>4.16</td>
<td>-10.02</td>
</tr>
<tr>
<td>Execution related items (6, 12 and 15)</td>
<td>4.04</td>
<td>4.30</td>
<td>-6.18</td>
</tr>
<tr>
<td>Learner performance items (7, 9 and 11)</td>
<td>3.99</td>
<td>4.14</td>
<td>-2.36</td>
</tr>
</tbody>
</table>

The data represented in tabular form above are represented graphically using ‘Box and Whisker’ plots where the ‘box’ represents the mean standard error (+/-SE) and the ‘whiskers’ the +/-1.96 standard error.

Figure 4.1 is a ‘Box and Whisker’ plot of the pre- and post-test development of Work Schedules and Lesson Plans related cluster data generated by the self-efficacy questionnaire.
Figure 4.1: ‘Box and Whisker’ plot of the ‘development’ pre- and post-test cluster data generated by the self-efficacy questionnaire.

Figure 4.2 is a ‘Box and Whisker’ plot presentation of the execution of lesson plans and work schedules cluster data generated by the self-efficacy questionnaire.

Figure 4.2: ‘Box and Whisker’ plot presentation of the ‘execution’ cluster data generated by the self-efficacy questionnaire.
Figure 4.3 presents a ‘Box and Whisker’ plot of the learner performance cluster data generated by the self-efficacy questionnaire. The probability (p) values for the improvements in self-efficacy in terms of the ‘development’ and ‘execution’ clusters are both 0.0000, which means that there is no statistically significant chance that the improved self-efficacy scores may be attributed to chance. The learner performance self-efficacy p-value of 0.0198 indicates that the improvement in efficacy is statistically significant at the 99% level of confidence. That these data are statistically significantly different can be seen visually in Figures 4.1 and 4.2, while Figure 4.3 reveals that there is only minimal overlap of the data at SE+/-1.96 levels between the pre- and post-test data generated by the learner performance items on the questionnaire.

![Box & Whisker Plot](image)

**Figure 4.3:** A ‘Box and Whisker’ plot of the learner performance cluster data generated by the self-efficacy questionnaire


2.3 Analysis of co-variance (ANCOVA)

The data generated for each of the clusters of data, viz., ‘development’, ‘execution’ and ‘learner performance’, were subjected to analysis of co-variance (ANCOVA) treatment. For the majority of the variables within the clustered items there is no statistically significant differences ($p \leq 0.05$) recorded, i.e. between environment, subject taught, language used in class, position held in the school, age of teacher, or average class size. However, treatment of the data using analysis of covariance techniques revealed differences for the pre-test data of the development (items 1-4) that were statistically significant at the 95% level of confidence ($p \leq 0.05$) for gender with the males respondents recording a higher mean score (3.91) compared to the female respondents (3.64). These data are represented in Table 4.6.

Table 4.6: Mean scores for gender related data on the pre-test items on the self-efficacy questionnaire

<table>
<thead>
<tr>
<th>Clustered items (questions)</th>
<th>mean scores</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development items (1-4)</td>
<td>Male</td>
<td>3.91</td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>4.3174</td>
<td>p</td>
</tr>
</tbody>
</table>

* statistically significant at the 95% level of confidence ($p \leq 0.05$)

There was also a statistically significant difference between phase levels taught in the pre-test data for the development cluster (items 1-4) with the senior phase teachers recording a lower mean score (3.53) than the FET band and ‘other’ teachers on the five-point Lickert scale of the self-efficacy questionnaire (3.79 and 4.02 respectively). This was also the case for the pre-test data for the execution cluster (items 6, 12 and 15) with the senior phase mean score (3.97) falling below that of the FET band and ‘other’ teachers (4.32 and 4.02, respectively). No statistically
significant differences were revealed for the pre-test data for the learner performance (items 7, 9 and 11) cluster, but there was a moderately statistically significant difference, i.e., at the 90% level of confidence (p ≤0.1) between the post-test data generated according to the phase levels taught, with the senior phase teachers’ mean (4.17) being lower than that of the FET phase teachers (4.36), but higher than the mean score generated by the ‘other’ teachers (3.89). These data are reflected in Table 4.7.

Table 4.7: Mean scores for phase of teaching related data on the pre-test items on the self-efficacy questionnaire

<table>
<thead>
<tr>
<th>Clustered items</th>
<th>pre- or post-test</th>
<th>mean scores</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Senior</td>
<td>FET</td>
<td>‘other’</td>
</tr>
<tr>
<td>Development (1-4)</td>
<td>pre-test</td>
<td>3.53</td>
<td>3.79</td>
</tr>
<tr>
<td>Execution (6, 12, 15)</td>
<td>pre-test</td>
<td>3.97</td>
<td>4.32</td>
</tr>
<tr>
<td>Learner perf (7, 9, 11)</td>
<td>post-test</td>
<td>4.17</td>
<td>4.36</td>
</tr>
</tbody>
</table>

* statistically significant at the 95% level of confidence (p ≤ 0.05); † statistically significant at the 90% level of confidence (p ≤ 0.01).

The lack of statistically significant differences for most of the factors other than gender and phase suggests that the effect of engaging in the Recognition of Prior Learning (RPL) process enhanced teacher’s self-efficacy in terms of developing and executing Work Schedules and Lesson Plans in a general manner, but the issues of gender differences in the pre-test for items 1-4, and the pre- and post-test data related to ‘phase taught’, will be discussed in more detail in the discussion chapter that follows.
3. **TEACHERS’ PORTFOLIOS**

Further quantitative and qualitative data were collected from the portfolios of evidence the students produced for the module PSPL201. I scanned a sample of portfolios selected from three centres (Durban, Kokstad and Lusikisiki) in order to cover the range of socio-geographic settings in which the respondents were located, viz. urban (Durban), semi-urban or country town (Kokstad) and rural (Lusikisiki). As I wanted to do an in-depth analysis of the portfolios, I selected 12 sets of complete data from each centre for comparison (there were only 12 full sets from the Kokstad region so this set the upper limit of the sample).

Incorporating the selected group (36 portfolios from three centres), I focussed firstly on the following *quantitative* aspects of the 36 selected participants from the three centres:

- Scores of the *self*-assessment and *peer* assessment of the two lessons, which are presented in table 4.8, and

- Scores of the self-assessment and the tutor-assessment of the final portfolio presented by the students, also presented in table 4.8.

The rubric provided for lesson assessment in the module includes the following six focus areas: *Planning and time allocation, Completion of planned activities, Use of materials and apparatus, Assessment, Lesson plan implementation* and *Articulation with work schedule*. Three descriptors are provided for each focus area, and are worth three, two or one mark respectively, depending on the quality produced. The maximum score in both the self- and peer-assessment is therefore 18.
Any student who achieved a mark of less than 15/18 is required to redo the lesson and have it re-assessed.

The portfolio assessment the rubric provides ten assessment criteria, incorporating the following areas: Organisational competency, Planning competency – lesson 1, Planning and creative competency - lesson 2, Implementation competency, lesson 1 – Self assessment, Implementation competency, lesson 2 – Peer assessment, The role of learner assessment in the Work Schedules and Lesson Plans, Logical development from work schedule to lesson plan to implementation and Overall impression and Assessor’s discretionary mark. There is also a late submission penalty criterion (Appendix A). The portfolio result is calculated to a maximum of 75 marks. Each assessment criterion is assessed on a four-point scale in a rubric and different weights are applied to the different criteria. (Appendix A) As this is a core component of the students’ continuous assessment (CASS) or year mark, 50% is regarded as a pass mark.

3.1 Quantitative data

Table 4.8 indicates the number of portfolios used for research purposes, as well as the mean and median of the data gained from them. Of the 36 portfolios scanned, 33 contained a self-assessment score for the first lesson presented, (i.e. three teachers left this section blank) while all 36 portfolios indicated a peer-assessment score. In the portfolios, 32 were self-assessed by the student, (i.e. four did not complete this section) while all 36 were assessed by the tutor concerned.
Table 4.8 Mean and median scores obtained by students from Durban, Lusikisiki and Kokstad centres

<table>
<thead>
<tr>
<th></th>
<th>Lesson plan</th>
<th>Portfolio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean</td>
<td>median</td>
</tr>
<tr>
<td>Self Assessment</td>
<td>84.9%</td>
<td>83%</td>
</tr>
<tr>
<td>Peer Assessment</td>
<td>75.3%</td>
<td>89%</td>
</tr>
</tbody>
</table>

Table 4.8 indicates a range of results obtained for the four assessments done. The mean and median of the self-assessment scores are also noticeably higher than the assessment scores by both the peers (for the second lesson) and the tutors’ assessments (for the portfolio). These results will be further discussed in the next chapter.

In order to compare the performance of the students in the different off-campus centres which were selected from a socio-geographic perspective, I now present in tables 4.9, 4.10 and 4.11 which illustrate the results obtained by the individual students in each of the four assessments summarised in table 4.8.
Table 4.9 indicates that three Durban students did not complete the self-assessment (dnc) after their initial lesson presentation, while one did not self-assess his/her portfolio. Only one student from this group was required to redo the initial lesson. (The portfolios contained no evidence that these re-assessments were done.)

In terms of lesson assessment, it is interesting to note that the peer assessors’ assessments were slightly higher that the self-assessment scores. This result is
contrary to the aggregate results for the whole group. However, the lower tutor assessment of the portfolio follows the norm for the whole group.

Table 4.10  Self- and peer/tutor assessment results obtained by the Lusikisiki students in their lesson and portfolio assessments. (dnc indicates: did not complete)

<table>
<thead>
<tr>
<th></th>
<th>Lesson assessments</th>
<th>Portfolio assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self assessment</td>
<td>Peer assessment</td>
</tr>
<tr>
<td>Student 1</td>
<td>13(72%)</td>
<td>13(72%)</td>
</tr>
<tr>
<td>Student 2</td>
<td>14(78%)</td>
<td>10(56%)</td>
</tr>
<tr>
<td>Student 3</td>
<td>15(83%)</td>
<td>16(89%)</td>
</tr>
<tr>
<td>Student 4</td>
<td>15(83%)</td>
<td>16(89%)</td>
</tr>
<tr>
<td>Student 5</td>
<td>12(67%)</td>
<td>14(78%)</td>
</tr>
<tr>
<td>Student 6</td>
<td>14(78%)</td>
<td>14(78%)</td>
</tr>
<tr>
<td>Student 7</td>
<td>14(78%)</td>
<td>16(89%)</td>
</tr>
<tr>
<td>Student 8</td>
<td>16(89%)</td>
<td>17(94%)</td>
</tr>
<tr>
<td>Student 9</td>
<td>17(94%)</td>
<td>17(94%)</td>
</tr>
<tr>
<td>Student 10</td>
<td>15(83%)</td>
<td>15(83%)</td>
</tr>
<tr>
<td>Student 11</td>
<td>15(83%)</td>
<td>14(78%)</td>
</tr>
<tr>
<td>Student 12</td>
<td>16(89%)</td>
<td>18(100%)</td>
</tr>
<tr>
<td><strong>Averages</strong></td>
<td><strong>14.6(81.4%)</strong></td>
<td><strong>15(83.3%)</strong></td>
</tr>
</tbody>
</table>

Table 4.10 indicates that two students from Lusikisiki did not complete the portfolio self-assessment exercise. Again, as was the case for the Durban group, it is of interest to that the lesson assessment by the peer is on average marginally better than the self-assessment score. An assessment score (in the lesson assessment) of less than 15 requires that the lesson should be redone. In this group there were five students whose self-assessment scores were below the required level. (Again, no evidence of the re-assessments was included in the portfolios.) Five students did not
achieve the required level from their peer assessors for their lesson presentations. In four cases the same student did not meet the minimum requirement in both self- and peer-assessment. (There was also no evidence in the portfolios that the lesson presentation was redone.) All the students achieved the minimum standards in terms of the portfolio assessments and again, as was the case for the Durban students, the average mark from the tutor for the portfolio assessment was lower than the self-assessment mark.

Table 4.11  Self- and peer/tutor assessment results obtained by the Kokstad students in their lesson and portfolio assessments. (dnc indicates: did not complete)

<table>
<thead>
<tr>
<th>Student</th>
<th>Lesson assessments</th>
<th>Portfolio assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self assessment</td>
<td>Peer assessment</td>
</tr>
<tr>
<td>Student 1</td>
<td>15(83%)</td>
<td>14(78%)</td>
</tr>
<tr>
<td>Student 2</td>
<td>14(78%)</td>
<td>15(83%)</td>
</tr>
<tr>
<td>Student 3</td>
<td>12(67%)</td>
<td>14(78%)</td>
</tr>
<tr>
<td>Student 4</td>
<td>17(94%)</td>
<td>15(83%)</td>
</tr>
<tr>
<td>Student 5</td>
<td>15(83%)</td>
<td>15(83%)</td>
</tr>
<tr>
<td>Student 6</td>
<td>17(94%)</td>
<td>15(83%)</td>
</tr>
<tr>
<td>Student 7</td>
<td>15(83%)</td>
<td>13(72%)</td>
</tr>
<tr>
<td>Student 8</td>
<td>dnc</td>
<td>14(78%)</td>
</tr>
<tr>
<td>Student 9</td>
<td>11(61%)</td>
<td>10(56%)</td>
</tr>
<tr>
<td>Student 10</td>
<td>17(94%)</td>
<td>15(83%)</td>
</tr>
<tr>
<td>Student 11</td>
<td>16(89%)</td>
<td>15(83%)</td>
</tr>
<tr>
<td>Student 12</td>
<td>18(100%)</td>
<td>17(94%)</td>
</tr>
<tr>
<td>Averages</td>
<td>15.2(84.3%)</td>
<td>14.3(79.6%)</td>
</tr>
</tbody>
</table>

Table 4.11 indicates that while one student did not complete the self-analysis on the first lesson, two did not self-assess their portfolio. There were three students who
did not meet the minimum requirements (15) for the initial lesson presentation and five in the second lesson presentation; in two cases the same student was involved. (Again there was no evidence of re-assessments done.) All students achieved the minimum requirements in the portfolio assessments. In the Kokstad group the average of the self-assessment result is noticeably higher than the assessment done by the peer, which fits the trend indicated in table 4.8.

If one views the average marks obtained at each of the centres for the different assessments done, it is of interest to note that the students at the urban centre, Durban, score noticeably higher in both the self-assessed and the peer-assessed lesson presentations than their colleagues at the other two (semi-urban and rural) centres. However, the average scores obtained in the portfolio assessment indicates very similar scores in the self-assessments and, in fact, the rural centre (Lusikisiki) scored noticeably higher than the other two centres in the tutor assessed result.

3.2 Qualitative data

Qualitative data was gleaned from the written comments by the students in terms of their lesson evaluation (first lesson) and by their peers when evaluating the second lesson.

3.2.1 Self-assessment of lesson

The student and his/her peer-assessor were also required to make qualitative (written) assessments as they reflected on the lessons presented. These data give an added insight into the developmental process of the student as a teacher as well as his/her self-efficacy perception. In an attempt to group the various responses, I
created the following categories of responses for the self-assessment section, as they became evident after reading all of the written comments, i.e. lesson 1:

- **Students feel they need more help and missed some criteria items,**

- **Contextual factors interfered with successful lesson delivery,**

- **Students feel positive about their efforts and**

- **No written comment provided.**

I also provide direct quotations of some students as a further illustration of their responses.

**Students need more help**

A variety of responses were interpreted to mean that the students felt that they still required further assistance. Students who intimated a certain degree of insecurity, varied in their responses. Some indicated that “I still need to be assisted in lesson planning”, while others had difficulty in distinguishing between a work schedule and a lesson plan. That so many still required assistance was inferred from these comments which suggested that they were not being successful in terms of the time allocation, for example “learners did not complete all the assessment tasks given.” Some saw their own failure in the poor marks attained by the learners. “… I was not good … the proof is the performance of the class and the marks they gained.”

**Contextual factors**

Here I found that numerous factors surfaced that are indicative of the difficult world in which the students operate. Issues of under-staffing and classes that are too
big were referred to by many students “Another issue that makes me to fail ... is the fact that we are understaffed at our school ...” and “Because of the number of learners in the class, individual attention was not effective...” are good examples of these comments.

Some students also claimed that multi-level classes (numerous grades in one class) hindered their performance while others were teaching outside the grade level they normally teach, e.g. “I had difficulties in conducting the lesson since the class was not mine and learners were unfamiliar with me, not expecting a Grade 1 teacher to teach Grade 6 learners ...” Another manifestation of this kind of problem lies in the following: “I was not used in teaching this learning area. I am a language teacher.”

Language was recognised as a problem for some, as is indicated by “…the language of communication was difficult. I had to code-switch ...” and “I had to interpret some questions in Xhosa.”

Equipment presented a problem on two levels, viz. what the school could (not) provide and what the learners could (not) bring to class: “Here at school we have no science kit. If there was kit here ...” and “Some learners were unable to bring mathematical instruments ...”

Finally, a problem that was experienced by one student only, but deserves mention as it can reflects the contextual constraints under which students sometimes have to perform: “My problem is that the students want to go home because I taught them in the afternoon ...”
Students feel positive

There were many who responded with satisfaction to their experience, while some indicated merely that “the lesson was completed as planned”. Many focussed on the enjoyment experienced by the learners, the interest they showed and the results they achieved, for example “The lesson was very interesting as learners were doing investigation themselves and writing the results.”

The most convincing comment I received from a student was: “I gain a lot from contact session classes. My performance and knowledge is improving and I can feel pride and confidence growing day by day.” (which is a very powerful self-efficacy statement). Similarly: “I’m very happy and enjoy being a science teacher. I feel that my lesson went exceptionally well.”

No written comment

There were quite a number of students (approximately 15%) who made no written comment. This may be attributed to the fact that they were insecure about their efforts and therefore struggled to verbalise their feelings. It may also just have been an oversight on their part.

3.2.2 Peer assessment of lesson

In terms of the peer-assessment, I created the following categories for the various written responses after reading and reflecting upon the responses:

- Students need assistance in some areas,
- Students produced excellent lesson and
• Contextual factors had a negative impact on the lesson.

It is significant to note the apparent progress made by the students from the initial reflective comments on lesson 1 to the subsequent comments made by the peer assessors with regard to lesson 2. While there were 44.7% of the students who felt positive about the lesson 1 they had presented, 89.7% of the peer assessors believed that the second lesson attempt was successful. Similarly, 39.5% of the students acknowledged ‘problems’ in their lesson presentation, but only 7.6% of the peer assessors indicated problems in this regard. Finally, 50% of the students cited contextual problems in their reflection on the first lesson presentation, while this factor was referred to by only 15.4% of the peer assessors for lesson 2. This shift is also clearly reflected in the quantitative data (results) presented earlier in this regard.

Student needs assistance in some areas

The comments here revolved mostly around the issue of time management. It is clear that many of the students were unable to complete the required (planned) tasks in the allocated time frames and there was also not enough time for experiments to be completed.

Student produced excellent lesson

This section prompted a number of very positive comments. Although the responses varied, most of the assessors focussed on learner engagement: “There is active participation by the learners.”; “The lesson was very interesting to the learners.” and “Active participation by the learners. Groups are fully involved in the lesson ...”
Special praise was reserved for those students who had been creative with their teaching aids: “The educator has come up with his learner support materials so as to make the lesson easy for learner understanding.” and “there were resources for information reference; learners were able to integrate both their baseline information and developmental knowledge.”

Some peer assessors also demonstrated a clear understanding of the outcomes required by the module in comments along the lines of “... much effort and work has been done so that lesson plan works as planned and be part of the work schedule that has been developed.”, The lesson plan and work schedule were specified within the context of the lesson.”, “Both the lesson plan and the work schedule specified the content of the lesson. Assessment standards were achieved ...the classroom activities were lively and learners achieved all three learning outcomes.” and “The student is good at planning her work schedule and lesson plan. The lesson plan is further developed into daily preparation in which she writes her particular activity which she has to do during the period of teaching and learning ... various assessment methods were used, such as self, peer, group and educator.”

**Contextual factors**

Comments made by peer assessors in this section clearly mirrored the comments of the students. Understaffing and overcrowding is indicated: “...because she is teaching more grades than should be,” and “She had 65 learners in the class, resulting in not having individual group attention.”

Others referred to the lack of equipment: “... it was so unfortunate, due to the lack of science kits in the classrooms ...”, the language issue: “Some learners were unsure to take the instructions that were given to them in their first additional
“language, not their home language.” and because of the fact that artificial situations were created in which the lessons were presented: “...learners were not understanding ... this may be ... since the educator is not used to teach them.”

3.3 Self-efficacy in the three selected groups

In order to link the efficacy-factor discussed earlier to the actual performance of this specific group of 36 students, I now provide the relevant efficacy statistics. Tables 4.12, 4.13 and 4.14 below represent the performance of the students, chosen from three centres (Durban, Kokstad and Lusikisiki) in their pre- to post-efficacy scores.

<table>
<thead>
<tr>
<th>Clustered items (questions)</th>
<th>Durban mean scores</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development related items (1-4)</td>
<td>4.1</td>
<td>4.2</td>
</tr>
<tr>
<td>Execution related items (6, 12 and 15)</td>
<td>4.2</td>
<td>4.3</td>
</tr>
<tr>
<td>Learner-performance items (7, 9 and 11)</td>
<td>4.2</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Table 4.12 Mean scores in the efficacy pre- and post-tests for the Durban students (n refers to the number of respondents)

Table 4.12 indicates that there is a slight improvement from pre- to post test in the efficacy scores attained by the Durban students in the in the responses to the first two clustered items, while the learner performance cluster indicates a noticeable decrease. This fits the norm for the whole group.
Clustered items (questions) | Kokstad | mean scores | n
--- | --- | --- | ---
| | Pre-test | Post-test |
Development related items (1-4) | 3.2 | 4.1 | 12
Execution related items (6, 12 and 15) | 4.0 | 4.2 | 12
Learner-performance items (7, 9 and 11) | 4.3 | 4.1 | 12

Table 4.13 Mean scores in the efficacy pre- and post-tests for the Kokstad students (n refers to the number of respondents)

Table 4.13 reflects the shift in efficacy scores for the Kokstad students as similar in pattern to the results attained by the Durban students, except for the first cluster, where the increase is significantly more pronounced – this pattern again fits the norm for the whole group.

Clustered items (questions) | Lusikisiki | mean scores | n
--- | --- | --- | ---
| | Pre-test | Post-test |
Development related items (1-4) | 3.8 | 4.6 | 12
Execution related items (6, 12 and 15) | 4.1 | 4.7 | 12
Learner-performance items (7, 9 and 11) | 4.4 | 4.5 | 12

Table 4.14 Mean scores in the efficacy tests for the Lusikisiki students (n refers to the number of respondents)

Table 4.14 indicates some clear similarities and differences to the Durban and Kokstad students’ responses. Firstly, the increases for the first two clustered items are more pronounced for Kokstad and Lusikisiki. Secondly, this group (Lusikisiki) increased their mean efficacy score for the learner-performance item, while the students from the other two centres showed a decreased efficacy level for this item.

These results are now presented graphically in order to highlight any links that may exist between the centres regarding the efficacy scores they produced. In figure
4.4 indicates the separate post-efficacy scores from the three centres to the three clustered items.

Figure 4.4 Figure representing the post-efficacy scores attained respectively by the three centres (Durban, Kokstad and Lusikisiki) for the three clustered items

This figure indicates that the average score for all three centres is the highest for the items 6, 12 and 15. These items probe the teachers’ perceptions of their ability to implement the Work Schedule and Lesson Plan prepared. Significantly, all three centres scored the lowest for items 7, 9 and 11, in which they reflect their perceptions of their ability to have an impact on their learners. Furthermore there is a noticeable difference in the scores obtained by the urban centre (Durban) and the semi-urban centre (Kokstad), as opposed to the rural centre (Lusikisiki).

In the next figure, the same data is presented in a different manner, reflecting the students’ individual performances, again in the three clusters of items. Here the focus is on the number of students (across all three centres) who showed increased
efficacy scores from pre- to post-test, those who showed decreased efficacy and those where there was no change in the self-efficacy scores between pre- and post-test.

![Efficacy changes: 36 students as a single group](image)

Figure 4.5 Figure representing the number of students from Durban, Kokstad and Lusikisiki who showed increased, decreased and unchanged efficacy scores

This figure demonstrates that the students from the three selected centres generally presented an increase in their self-efficacy scores in all three of the clustered items, with the largest group (28) reflecting an increased sense of self-efficacy in items 1 – 4, where they responded to questions that probe their perception of their ability to plan and draft Work Schedules and Lesson Plans. However, less than one third of the students (11) showed an increased level of self-efficacy for the learner performance items. Figure 4.5 also indicates that the students felt generally less secure about their ability to implement Work Schedules and Lesson Plans and to have an impact on the learners, as the graph indicates that 17 students showed a decrease or no change in efficacy levels for the implementation cluster and 25 students (more than half) showed a decreased (or unchanged) level of self-efficacy in the learner-performance cluster.
4. INTERVIEWS

In order to further develop my understanding of the data analysis above, I conducted interviews with three students from each of the focus-centres, viz Durban, Lusikisiki and Kokstad.

The sample of student-interviewees was based on using an equal number of students (three from each centre), who had shown a significant improvement or a decrease in their self-efficacy levels, as well as some students who showed minimal or no change in their self-efficacy development during the period of the intervention. (It should be noted, however, that I was not always able to interview the person I wanted to, as availability of the student also impacted on my choice.) This may be referred to as ‘convenience sampling.’

My approach was to set up focus group interviews which allowed for the free flow of the students’ responses to my questions. At the beginning of the interview, I clarified to the students that there were no right or wrong answers; that it was their responses that were important to me. I spent some time explaining to them the concept of self-efficacy, to ensure that they knew exactly what the focus of our discussion was. Finally, I outlined for them the research questions that lie at the core of this research.

In my preparation of the students for the interviews, I clarified a number of points I intended to probe. There were three ‘before and after” questions, viz. probing their ability to draft (develop) Work Schedules and Lesson Plans, their ability to execute Work Schedules and Lesson Plans and the impact they believed they were able to have on their learners. These were followed up by a discussion on the contextual factors they believed had had an impact on them.
4.1 Student interviews: Durban

In Durban I interviewed in focus-group format three students, referred to – for the purposes of this report – as Student D1, D2 and D3. While the analysis of Student D1’s pre- to post-efficacy scores indicated a significant drop, Student D2 performed much better from pre- to post-test. Student D3 recorded almost no change.

The students were interviewed at their teaching centre on a Saturday morning before lectures.

Student D1 is a 32-year-old female teacher with a Junior Primary Teachers’ Diploma. She has taught for thirteen years, but has never taught Mathematics or Science before enrolling on this programme. She teaches at a school with 750 learners, and although the average class size is only 16, her average class size is 35.

In terms of her self-efficacy progress she showed a fairly significant drop in all three sets of items: for items 1 – 4 (developmental) her efficacy level dropped by 0.75, for items 6, 12 and 15 (execution) her efficacy level dropped by 0.34 and for items 7, 9 and 11 (learner performance) her efficacy dropped by 1.0.

Student D2 is a 47-year-old female teacher with a Teachers’ Diploma. She has taught for 25 years, teaching Mathematics during this period at grade 8 and 9 level. She teaches at a school with just over 500 learners and her average class size is 40. Student D2 showed a significant increase in all three categories of the self-efficacy pre- to post test. For the developmental items the increase was 0.5, for the execution items it was 1.0 and in the learner performance items the score increased by 0.33.

Student D3 is a 33-year-old female post-level one teacher. She teaches in a school with 1500 learners where her average class size is 80. She has taught for six
years and has taught Mathematics and Science for the last three years at grade 7 level. She has a Senior Primary Teachers’ Diploma. Her self-efficacy scores indicated no significant change from the pre- to the post-test, the only change being a 0.5 increase in the ‘development’ items (Items 1 – 4).

**Issues revealed by the Durban interviews**

In terms of the development items (planning of Work Schedules and Lesson Plans) prior to the intervention, student D1 indicated that because she had to do her planning alone, “it was very difficult.” Student D2 explained in this regard that “sometimes we do it and sometimes we do not do it. We were not actually sure what must go in the lesson plan.” Student D3 echoed these sentiments. After the intervention (PSPL201) all three felt that they were more competent in this regard. Student D1 said that “the course had helped me and I could do it (lesson plans) better.” Student D2 said that “the content to go in was now well specified.” She added, however, that “it is too much to write and it is impossible to do it on a daily basis.” Student D3 felt that she was “much better focussed.”

In terms of the execution of the Work Schedules and Lesson Plans before intervention, Student D1 again referred to a “difficult year” she had had and was not happy with her performance in front of the learners. Student D2 felt “confident when I am standing in front of the class and I know my content ... the problem is only with the writing the work schedules. It is too much to do.” These comments fit the decrease (D1) and increase (D2) in efficacy scores recorded. Student D3 referred to the fact that “there was much confusion, as we knew things were changing and we felt uncertain.” After the intervention Student D1 felt “much more confident”, while Student D2 said that “because my knowledge now was being advanced, I have so
many things that I know that have been added to my knowledge about my subject.”

Student D3 indicated that, despite the intervention, she was “under a lot of pressure.”

She added that although she knew what to do, time constraints were often a problem. Again, for a student who showed no change in efficacy level, this is the kind of comment one would expect.

With regard to having an influence on the learners, Student D1 felt that she had “done well from the beginning,” and that this factor was never a problem. Student D2 indicated that “the problem was with the learners … because the government took away corporal punishment.” Student D3 agreed with student D1 that this factor was never a problem for her. All three referred to the assessment strategies that they had learnt about (during the intervention) that had ensured that the learners were more involved in their learning. Student D2 added that she felt there “was more structure” in her classroom.

In terms of contextual issues student D1 felt that the number of learners was a big challenge for her as a teacher. She has six classes, each with approximately 60 learners. “I am not able to attend to each and every child, their needs.” Added to this was the fact that there was “not enough floor space.” Students D2 and D3 did not, however, experience this problem. Language was a problem for all three students. Student D3 said “I try to teach in English, but when they (learners) reply me, they reply me in Zulu.” There was also a shortage of apparatus. Student D2 indicated that “the students do not have Maths sets, except for those individuals who have it – I try to group them together, but it is time consuming. When they are grouped together, and I do this, others are playing.” They all referred to the fact that the roll-out of the
RNCS by the provincial education department was inadequate and that no follow-up was made.

4.2 Student interviews: Lusikisiki

In Lusikisiki I interviewed three students, again as a focus-group, referred to as Student L1, L2 and L3. Student L1 showed improved efficacy scores for two of the three clusters, while Student L2 showed a drop in two and an increase in one cluster and Student L3 a fairly good increase in all three clusters of items.

The students were interviewed in their centre on a Saturday afternoon after lectures.

Student L1 was a 39-year-old male student who was a Head of Department in his school. He taught at a relatively large school (979 learners) and taught large classes (53 learners per class). He taught Mathematics, Science and Technical Subjects to Gr. 8 and 9 learners, and had a Technical qualification. He had ten years’ experience as a teacher. In the efficacy testing he showed improved efficacy in two of the three categories (a 1.25 increase for the developmental items and a 1.33 increase for the execution items) and an unchanged efficacy level in the third cluster.

Student L2 was a 54-year-old female student who was a post-level one teacher. She taught at a relatively small school (410 learners) and taught 33 learners in class on average. She did not teach science and mathematics, but was a Grade R-teacher with an NPDE qualification. She had taught for 28 years. In the efficacy testing, she showed decreased efficacy in two of the three categories. The developmental items reflected a drop (from pre- to post-test) of 0.25 and the learner performance items
dropped by 1.0. She did show an increase of her efficacy level of 0.33 in the execution items.

Student L3 was a 48-year-old female teacher who was a Deputy Principal at her school. She taught at a relatively small school (509 learners), but had large classes to teach (60 learners per class). She taught Science and Mathematics in Gr. 7 with a grade 12, plus 3-qualification. She had taught for 28 years. In the efficacy testing, she showed increased efficacy in all three categories. In the developmental items, the score increased by 1.25, the execution score by 0.66 and the learner performance score by 0.33.

*Issues revealed by the Lusikisiki interviews*

The three students reported that they were not confident in all three of the focus areas at the start of the PSPL201 intervention. Examples of their comments at this point are: L1: “We were teaching in the previous style and (we) knew it was wrong,” and “We were not given clear direction on planning work sheets and lesson plans.” L2: “I was not comfortable with how I was teaching.” L3: “The Department of Education failed us, as they provided only 3 days to train us – we were not able to do it.”

Similarly, in response to their post-intervention experience all three reported an increased sense of self-efficacy. L1: “Our NMMU tutors showed us how to do it” and “I felt better about myself.” L2: “I felt happy in school.” L3: “We gained a lot from (our) lecturers ... they gave us direction and guided us ...” and “We gained new strategies to teach.”
The contextual issues that they raised focused mostly on the lack of materials and equipment (teaching aids), class size and language (learners’ inability to understand English). The Department of Education also featured as a major source of frustration, as the teachers felt that the education department had let them down.

4.3 Student interviews: Kokstad

The interviews were conducted in the Municipal Library in Kokstad during a weekday afternoon. We were given a separate room which was ideal for conducting the interviews. The students are referred to as K1, K2 and K3. Student K1 and K3 increased in one cluster, dropped in another and reflected no change in the third, while Student K2 showed increased efficacy levels in 2 clusters and no change in the third cluster.

Student K1 is a male teacher (post-level one) who is 29 years old. He teaches at a school with more than 700 learners and teaches an average class size of 32. He has taught for three years at grade 7 – 9 level, but does not teach Mathematics or Science. The developmental items of his self-efficacy increased by 1.25, while the learner performance items’ assessment dropped by 0.33. There was no change from his pre- to post-test for the execution items.

Student K2 is a 38-year-old male teacher with a Senior Teachers’ Diploma. He teaches at a school with more than 800 learners and an average class size of 65. He does not teach Mathematics or Science, but teaches in the Senior Phase. He has taught for 13 years. In the self-efficacy assessments he demonstrated marginal increases in the developmental (0.25) and execution (0.33) items, and no change in the learner performance items.
Student K3 is a 38-year-old female post-level one teacher at a school of 1200 learners. She has a senior Teachers’ Diploma and has taught for 11 years. She has taught mathematics and science in the Senior Phase for 11 years. Her average class size is 80. In fact, in the interview she indicated that she teaches five classes of 80 learners. From the pre- to the post-test her efficacy score in the developmental items increased by 1.5. In the execution items her score decreased by 0.67 and in the learner performance items her score was unchanged.

Issues revealed by the Kokstad interviews

Regarding the development of Work Schedules and Lesson Plans, all three students concurred that the exposure to PSPL201 had given them clear direction. Student K1 said that he “understood the process of planning on a macro level and then doing the lesson plans.” This view was echoed by his colleagues.

In terms of the execution of the lesson plans in the classroom Student K1 indicated that he had “not found it difficult.” In fact, he indicated that “the structure had made delivery easier.” Student K2 felt that the execution was initially “very difficult in terms of time management, because you plan the lesson plan but due to the large number of learners in class you could not do the lesson according to your plan”. She added, however, that “learning the various group assessment methods, and rubrics”, had made her job easier. Student K3 felt that the learners were “not responsive” in the beginning, but they “quickly began to respond to the new methods.”

‘Impacting on the learners’ elicited the following responses: Student K1 felt that the intervention of PSPL201 had made a “positive contribution” to the impact he was able to have on his learners. He added that the variety of assessment methods had
“contributed a lot to learner participation in the classroom.” Student K2 believed that “the rubrics, self-assessment strategies, the peer assessment strategies helped to make my load lighter ... and what I like is that they start assisting each other and they know where they go wrong - their co-operation improved, their learning improved” Student K3 felt that “no great change had taken place”. She did concede, however, that her exposure to PSPL201 did improve this aspect of her teaching.

Contextual issues were highlighted by all three interviewees. Although large classes were not a problem for Students K1 and K3, student K2 saw her five classes of 80 learners as a real problem. Student K1 did find it difficult to teach five learning areas over three grades, and would have preferred to teach only the Natural Sciences. The issue of language (learners not taught in their mother tongue) was problematic for all three, and they felt that they had to code switch continuously to ensure learners understood. An interesting observation in this regard was made by Student K3, when she said that she had her reservations about teaching in Xhosa: “My children attend a school in town, they speak English fluently, even my daughter in grade 3. Why can’t we ... our schools also have such things?” Facilities were not a problem for Student K1, but for Student K2 the fact that he did not have enough chairs in class presented a real challenge. The lack of science equipment (and a laboratory) presented great difficulties. Also, learners did not have instruments. Student K3 reported, however, that she had found sponsorship for her grade 12 class to be supplied with Mathematics instruments, but added that very few of them had calculators.

All three students indicated that the departmental training was inadequate. Student K3 added that after the initial three-day training, there was no follow-up.
5. SUMMARY OF MAIN ISSUES

During the course of the research, a number of issues arose from the results that form the basis for the discussion that follows in the next chapter:

- The students’ self-efficacy generally improved as a result of the intervention of the module PSPL201,

- The increase in efficacy differed with regard to the three clusters of items, with the development cluster generally showing a greater increase than the execution and learner performance clusters, the latter showing the smallest increase,

- There were a number of issues regarding locus of control that came to the fore, and

- The context in which the students operate as teachers had a significant impact on the levels of self-efficacy achieved by the students.

6. SUMMARY

In this chapter I reported on the results obtained from the various research approaches employed in this study, viz. the efficacy questionnaires, the biographical details questionnaire, the student-portfolios and the focus-group interviews conducted with a sample of the students.

I provided a statistical analysis of the quantitative data generated by the self-efficacy questionnaires completed by the students both pre- and post-intervention. These data were subjected to reliability and validity testing and the results were presented in descriptive and inferential mode. I also conducted a closer analysis of
the efficacy scores of twelve students from each of the selected centres (Durban, Kokstad and Lusikisiki) in order to ascertain if the socio-geographical environment in which students operate, impact on the efficacy levels of the students.

I then reported on the data obtained from the biographical details questionnaires. These questionnaires provided information regarding age, gender, working experience in terms of years taught, subjects, phase, etc. and the environment in which they work. Again I tried to ascertain if any of these factors are linked to the students’ performance in terms of their efficacy ratings.

I further analysed the students’ performance (the scores attained in their Work Schedules and Lesson Plans and for the portfolios) in the production of their portfolios of evidence. Added to this was a qualitative analysis of the written responses by students, peer assessors and tutors.

Finally, I provided data on the detailed biographical information captured on biographical details questionnaires of those students (from each of the three selected centres) with whom I conducted focus-group interviews. I reported on the outcome of the interviews based on a set of pre-determined questions.

These data (efficacy scores, portfolio results and interviews) will be triangulated and the findings based on these data, placed within the context the literature review, form the framework for the discussion presented in the following chapter.
CHAPTER FIVE

DISCUSSION

1. INTRODUCTION

In this chapter I firstly focus on the self-efficacy clustering that emerged during the data analysis of the pre- and post-efficacy tests. I then discuss the descriptive data collected from the biographical information questionnaire as well as the data analysis of the self-efficacy pre- and post-test questionnaires completed by the full sample of the respondents (n = 123). These data are then placed within the theoretical framework presented in chapter two.

The results of the full sample of respondents in terms of drafting Work Schedules and Lesson Plans are then discussed, with further discussion centring on the portfolio results of approximately 25% of the total sample of students (n = 36) selected from three specific off-campus centres. Links between the efficacy scores obtained and these students’ actual performance are then explored through both the quantitative and qualitative evidence obtained from the portfolios. Again references to the literature review (Chapter 2) are brought into the discussion.

Finally, the information gathered from the focus-group interviews which were conducted with a small sample of students (n = 9; three from each of the designated centres) are discussed and referenced to the literature review. The results from the analysis of the efficacy (pre- and post-) testing and the scores and qualitative
responses obtained in the portfolios are triangulated with the results from these interviews, which provide further support for the findings of the former two areas of investigation.

2. **SELF-EFFICACY CLUSTERS**

The question posed at the start of this research report asks if the process of generating evidence by teachers for the Recognition of Prior Learning in the Module PSPL201 can effect a change in their sense of self-efficacy. The statistical analysis of the quantitative data presented by the pre- and post-tests regarding the self-efficacy assessments produced a number of interesting insights. Firstly, the statistical analysis of the efficacy questionnaires indicated three well-defined sets of items, which clustered as follows: the teachers’ ability to *develop* Work Schedules and Lesson Plans (Items 1 – 4), their ability to *execute* Work Schedules and Lesson Plans (Items 6, 12 and 15) and *learner performance* (Items 7, 9 and 11). These three clusters, along with the descriptive statistics, form the basis of the discussion in this section.

The fact that the students showed (as the discussion that follows will indicate) differing levels of efficacy-change for the three clusters indicated, fits the findings of a number of researchers (Hone, 1970, Mechling, Stedman & Donnelley, 1982, Cunningham & Blakenship, 1979) who found that teachers would gravitate towards tasks where they felt more competent and avoid those where they felt less confident. Similarly, I believe that this principle may apply in terms of teacher efficacy-experiences. Teachers may *feel better* about their ability to perform effectively in
some areas (developing Work Schedules and Lesson Plans), as opposed to others (execution of lessons and learner-performance).

Secondly, while the analysis showed that there were three sets of items that clustered, there were also a number of items (six, in total) that did not cluster, i.e. showed no commonality across the various responses. Items that did not cluster were items 5, 8, 10, 13, 14 and 16. The significance of this became apparent as the research unfolded, because these items all focus on the teachers’ perceptions of their ability to impact on the learners in their classes. The analysis indicated (where similar items – learner performance – did cluster) that this is, in fact, the area where educators showed the lowest level of efficacy increase. This finding correlated well with the quantitative analysis of the portfolio results (n = 36) and the qualitative responses made by a small sample of educators (n = 9) during the interviews that were conducted. In each of these avenues of research, this factor – impacting on the learners in their classes – was indicated as the most problematic for the teachers. Generally, contextual issues were cited as the main reason for poor learner performance.

This trend links with Rotter’s locus of control theory (Rotter, 1966), which purports that locus of control is either internal or external. Given the context in which these teachers operate, I believe that external factors play such a big role that the majority of these educators’ sense of self-efficacy regarding learner performance is externally driven; hence the relatively poor performance for the learner performance cluster, when compared to the other two clusters. My sense is that teachers control
their own learning (involvement in PSPL201) and learn from the intervention how to plan and develop Work Schedules and Lesson Plans. Consequently, they essentially feel good about their ability to develop Work Schedules and Lesson Plans. At the execution stage – delivery in the classroom – they still experience a degree of control. They are, as indicated above, much less in control in terms of learner performance, as their expectancy, has (historically) been negative. While Rotter (1966) saw internal and external locus of control as a personality trait, others disagree, and place a bigger emphasis on context.

These expectancies are mental representations: based on past outcomes and the situation they now confront; these things then influence their judgment of the likelihood of getting their desired outcome. Thus their expectancy judgments have a causal influence on their behavioural choices. (Rotter, 1954)

2.1 Descriptive statistics

The descriptive (biographical) data supplied by the respondents, and reported in Table 4.1, indicate that most of this cohort of teachers are fairly experienced in terms of years taught and subject specific (mathematics and science) teaching. What is of concern, however, in the fact that almost 25% teach outside the Senior and Further Education and Training Phases, which are the phases for which the module is being offered. There are also a number of Foundation Phase teachers in this group. The concern is that these (FP) teachers are not in a position to take the lessons learnt back into their class rooms. When they had to present their science and mathematics lessons for assessment, they taught (what one must assume, was for them) foreign subject matter to the classes of other teachers.
Table 4.2 highlights, among others, the class sizes in which these teachers operate. Class size also emerged in both the written responses of the lesson presentations (portfolios) and in the interviews as one of the important contextual factors that militated against effective teaching.

The mean scores of the whole group in terms of their efficacy pre- and post-test results are reported in Table 4.3. The results show that from the pre- to the post-test, there was a general increase in efficacy in the mean scores for all three clusters. This would indicate that the intervention strategy of the PSPL201 module generally had a statistically significant, positive effect on the students’ sense of self-efficacy. It is interesting to note that the increase in efficacy was most pronounced (0.59, which represents a 12% increase on the five-point Likert scale) in the development related clusters, while the learner performance cluster showed the smallest increase, 0.15, which is a 3% increase. The execution related cluster improved by 0.26 (5%). These increases correspond very closely with the results generated for the portfolios produced by the smaller group of students selected from the three off-campus centres, Durban, Kokstad and Lusikisiki, while these two sets of quantitative and qualitative data triangulate very well with the qualitative comments made by the students during the focus-group interviews, as they reflected a stronger sense of efficacy-increase for the development and execution related items, while they had a much more subdued response to the learner performance items.

The increase in efficacy levels may be attributed to the module’s strategy which requires at least three repetitions of the development of the Work Schedules
and Lesson Plans, during which there are opportunities for intervention by a (more experienced) peer as well as the tutor charged with the delivery of the module, which means that it can be considered as a *mastery process*, and would be consistent with Bandura’s posit that ‘mastery experiences’ (1994) are the primary source of self-efficacy. Bandura sees these mastery experiences as *the most effective manner* in which to enhance self-efficacy. There is also consistency here with Bandura’s concept of ‘vicarious experiences provided by social models’ (Bandura, 1994). One may assume that the assessments and interventions (feedback) by the peer assessors and the tutors strengthened the students’ knowledge base regarding Work Schedules and Lesson Plans and consequently also their sense of self-efficacy.

Furthermore, the basis of Bandura’s argument (1994) is that if individuals experience success, or *judge themselves to be successful*, there is the distinct possibility that their level of self-efficacy will be enhanced. Not only is their work assessed by others, but the students are given a number of opportunities to *self-assess* their work. The results of these self-assessments are, as is indicated in chapter four, generally relatively high, giving the students opportunities to *judge themselves to be successful*. This sense is further supported by the verbal feedback I received from the students who participated in the focus-group interviews. They made it quite clear that they *felt good* about their ability to develop and execute worksheets and lesson plans *after* the intervention.
2.2 Inferential statistics

The p-value and reliability statistic - Cronbach Alpha (工艺品) - indicate that the data are highly motivated both in terms of probability and reliability. The level of the probability values at 0.0000, indicate that the improvement in efficacy levels of the respondents are – statistically speaking – clearly attributable to the intervention strategies in the module PSPL201. The 99% level of confidence (p ≤ 0.01) in the learner performance cluster is equally convincing.

With reference to most of the variables contained within the clustered items there are no statistically significant differences recorded. This refers to variables such as environment, subject taught, language used in class, position held in the school, age of teacher and the average class size. However, the analysis of covariance techniques (presented in Table 4.6) revealed differences for the pre-test data of the development (items 1-4) that were statistically significant at the 95% level of confidence for gender with the males respondents recording a higher mean score (3.91) compared to the female respondents (3.64). My research (written and verbal responses in the portfolios and interviews) has indicated no factors that could contribute to the higher scores for the male respondents.

Another variable that reflected a statistically significant difference was for the phase levels taught in the pre-test data for the development cluster (items 1-4). Table 4.7 indicates that the senior phase teachers recorded a lower mean score (3.53) than the FET band and ‘other’ teachers (3.79 and 4.02, respectively). This was also the case for the pre-test data for the execution cluster (items 6, 12 and 15) with the senior
phase mean score (3.97) falling below that of the FET band and ‘other’ teachers (4.32 and 4.02, respectively). While the pre-test data for the learner performance (items 7, 9 and 11) cluster, showed no statistically significant difference, there was a moderately statistically significant difference, i.e., at the 90% level of confidence between the post-test data generated according to the phase levels taught, with the senior phase teachers’ mean (4.17) being lower than that of the FET phase teachers (4.36), but higher than the mean score generated by the ‘other’ teachers (3.89). As indicated earlier in this discussion, the module is aimed at senior phase teachers. It is therefore difficult to explain why the senior phase teachers scored lower in the two pre-tests noted above. However, the lower score in the post-test for the learner performance cluster would be consistent with the data obtained from written responses in the portfolios and the focus-group interviews, where students reported difficulties in this regard. This cluster – learner performance – has shown a common (negative) thread throughout this study.

3. TEACHERS’ PORTFOLIOS

The portfolios provided both quantitative and qualitative data which forms the basis for the discussion in this section. This discussion focuses on the portfolios provided by the students from the three centres selected on the basis of their socio-geographic status (urban, semi-rural and rural).

3.1 Quantitative results

Quantitative results provided by the portfolios, (n = 36) included a self-assessment for the first-lesson presentation and a peer-assessment for the second-
lesson presentation, as well as a self-assessment and a tutor-assessment for the portfolio as a whole. Closer scrutiny of these data (Table 4.8) indicates that in both cases (lesson presentation assessments and the portfolio assessments) the self assessed results are almost 10% higher than the peer- or tutor-assessed results. This may be as a result of the students’ inability to assess their own work accurately or, alternately, may be viewed as normal under the circumstances that students are looking to achieve good results.

A comparison of the mean results attained for each of these assessments by the students at the different centres, (Tables 4.9, 4.10 and 4.11) indicates that there is no consistent pattern that emerges. While the Durban centre scores the highest mean result for the self- and peer-assessed lessons (16.3 and 16.9 respectively out of 18), Kokstad scores the lowest (14.6) in the self-assessed result and Lusikisiki the lowest in the peer-assessed result (14.3). The students at the Kokstad centre score the highest mean result in both the self- and tutor-assessed portfolios (57 and 55 respectively out of 75), with the Durban students the lowest – 45.6.

Although the same rubric was used for both the self- and peer-assessed lesson presentations, one must assume that a number of factors come into play: inexperience of both the student and the peer in dealing with the rubric provided, subjectivity, collegiality, etc. Consequently these results are not necessarily reliable and no inferences can be made from them in terms of the socio-geographic context in which the teachers operate.
However, when one considers the *mean efficacy scores* attained by the students at the three centres independently, a different picture emerges. (Tables 4.12, 4.13 and 4.14) The shift from pre- to post-test for Lusikisiki (the rural centre) and for Kokstad (the semi-rural centre) is much more marked than it is for Durban (the urban centre).

While the Lusikisiki students ‘moved’ from 3.8 to 4.6 (pre- to post-test on a five-point Likert scale) for the development cluster (Items 1 – 4) and Kokstad moved from 3.2 to 4.1, the students in the Durban centre only gained 0.1 (moving from 4.1 to 4.2). It would appear that the rural and semi-rural students’ perceptions of the gains they had made (sense of feel-good) were much more marked than those of the urban centre. One could argue that they (rural and semi-rural students) felt more ‘disadvantaged’ than did their colleagues in the urban centre, and therefore the lessons they learnt, had a greater impact on their sense of efficacy regarding the development of Work Schedules and Lesson Plans.

Similarly, for the execution cluster (Items 6, 12 and 15), the mean score suggests that the Lusikisiki students gained significantly – from 4.1 to 4.7, a gain of 0.6. The Kokstad students gained 0.2, while the Durban students again had a marginal (0.1) increase. One could argue along the same lines here (as for the development cluster) that the Lusikisiki students’ sense of growth (improved self-efficacy) was more pronounced because of their under-privileged position.

The learner performance cluster (Items 7, 9 and 11) follows the same pattern, *albeit* in a slightly different format: While the urban centre showed a ‘drop’ of 0.4
and the semi-rural centre similarly a ‘drop’ of 0.2 (4.3 to 4.1), the Kokstad students increased their mean efficacy level for this cluster by 0.1 (4.4 to 4.5). This is, I believe, quite significant as an increase for this cluster (albeit marginal) is contrary to the feedback I received from both the written responses (in the portfolios) and the feedback I got from the focus-group interviews. It should, however, be noted that this increase is consistent with the efficacy trend for the whole group. On the other hand, the lower efficacy levels recorded by the Durban and Kokstad students are consistent with the feedback regarding the impact of context on learner performance. These two outcomes are supported by the feedback from the (portfolio) written responses and the interviews. (I will further explore this trend later in this chapter.)

Finally, another interesting factor to emerge from the analysis of centre-specific efficacy results (n = 36) can be found in Figure 4.2, where the number of increased, decreased and unchanged efficacy scores is reported. It is clearly demonstrated that the greatest number of increases (29 students) occurred in the development cluster (Items 1 – 4), followed by 20 students who increased in the execution cluster (Items 6, 12 and 15). The lowest increase (11) was recorded for the learner performance (Items 7, 9 and 11). Conversely, the highest number of students (15) recorded a decrease in the learner performance cluster. This information fits the pattern that emerged in both the written responses in the portfolios as well as in the focus-group interviews.
3.2 Qualitative results

The written responses by the students in their portfolios were interpreted and placed into four categories: those who indicated they *needed more assistance*, those who cited *contextual problems* in their inability to deliver an effective lesson, those who felt good about their delivery and those who provided *no comment*.

**Students need more help**

The comments made in this regard are consistent with the results indicated by the shift in efficacy scores, in that they record the feelings of insecurity experienced by many of the students at the start of the module intervention. Many expressed concerns about their inability to plan the time frames of the lessons effectively, and also struggled to come to grips with the concept (or lay-out) of Work Schedules and Lesson Plans. These comments also echo the verbal input I received from the focus group interviews.

**Contextual factors**

Similarly, the contextual factors are a common thread throughout this research. The interesting thing, however, is that despite the increased efficacy generally attained by the students in the three clustered sets of items, this factor continued to be cited, even by those who had shown an increase of their efficacy levels.

Research (Guskey & Passaro, 1993) has cited an internal versus external source of efficacy, reporting that teachers with high efficacy levels will assume responsibility for poor learner performance, while those with low efficacy levels will
attribute failure to external factors. While this may be true under ‘normal’ circumstances, I believe that context plays such a central role in the lives of most of these teachers that it impacts on both groups. In this regard the findings of Henson (2001) that teacher-efficacy is a joint, simultaneous function of a teacher’s analysis of the teaching task, supports my belief. Teachers consider a variety of issues, including context, in the determination of their response. Similarly, Housego (1992) and Hoy and Woolfolk (1990) reported general changes in teacher-efficacy attributable to a growing pessimism about the overpowering negative constraints that can hamper a teacher’s efforts.

An abiding sense that I gained from this study, therefore, is that despite the impact of the intervention (PSPL201) on the lives of the students, the context in which they operate, will always negatively impact on their efficacy levels. Class size, language problems, teaching multi-level classes, lack of equipment and facilities all add up to a context that militates against effective delivery in the class room.

**Students feel positive**

Positive comments were made by some students. These comments echo strongly with similar comments made during the focus group interviews. In many cases the positive feelings were attributed to the insights gained from the intervention (PSPL201) and – more specifically – the tutors involved. These comments also mirror the increased efficacy levels reported earlier.
Some students made no written comment. This may have been an oversight on their part or they chose not to comment.

4. INTERVIEWS

The small sample (n = 9) included three students from each of the three selected centres. Although the sample is rather small, I am satisfied that interviews with more students would not have added much to the gist of this report. I found the students relaxed and quite amenable to sharing their feelings regarding the questions I posed, and I believe the matter has been adequately covered.

4.1 General comments

The interviews consistently provided feedback that where there was a great deal of uncertainty at the start of the programme regarding the development of Work Schedules and Lesson Plans, this situation was – based on their comments in this regard – very clearly reversed at the conclusion of the intervention. Respondents reported that they had gained a lot from the experience and from the tutors. They felt more assured in terms of both content and design, i.e. what goes where.

This feedback triangulates well with the increased efficacy scores recorded for the full sample of respondents, as well as the three groups whose portfolios were analysed. Again, the feedback is consistent with Bandura’s comments (1994) regarding ‘mastery experiences.’
Similar feedback was made with regard to the *execution* cluster of items. They struggled prior to the intervention, but felt a much better command of the situation post-intervention. However, it was noticeable here already that the contextual issues emerged. Execution was hampered by the context in which they taught – huge multi-level classes, language problems, etc. The results of the efficacy pre- and post-tests mirror this trend – although there was an increase in the efficacy scores generally, the increase was not as pronounced as the increase for the developmental cluster.

This (downward) trend continued in the students’ responses with regard to the *learner performance* cluster questions. They cited issues such as discipline, large numbers, the lack of adequate equipment, etc. as factors that impacted on their ability to impact on the learners’ performance. Again, the results of the efficacy tests (pre- to post) reflect a small increase generally in the efficacy level for the whole group, but this area did create a number of problems for the students.

### 4.2 Individual comments

If one looks at the students involved in the focus-group interviews individually, there are some interesting observations to be made. While seven of the interviewees taught in the senior phase, two were foundation phase teachers.

Students D1 and L2 fall into the group that do not teach mathematics or science – they both teach at Junior Primary (Foundation) Phase level. This makes them ‘unsuitable’ for the course, as they are required to teach (for the purposes of assessment) a subject which is foreign to them. The fact that Student D1 showed a decrease in all three of the efficacy clusters and L2 a drop in two and a marginal
(0.33) increase in the execution cluster is therefore to be expected. They generally reported positively during the interviews, but these comments do not fit the profile projected by their efficacy scores. One of the reasons for the positive comments may be that they were referring to themselves as teachers generally – one could surmise that in a foundation phase class, in front of junior primary learners, working with content they knew, they may both be competent teachers. It is highly unlikely that they could have experienced the assessment process as a positive one.

Students D2 and L3 showed an increase in all three clusters. They both teach in the senior phase and their comments were a good reflection of people with high efficacy levels.

The other five students showed generally rather erratic responses in terms of their efficacy scores. Students L1 and K2 both produced increases in two of the three clusters. It is interesting to note that these increases were recorded in the developmental and execution clusters. They both recorded no efficacy change in the learner performance cluster. This trend, in which the learner performance cluster scores the worst, has been apparent throughout this discussion. Similarly, Students D3 (no change), K1 (drop) and K3 (no change) continue the trend for this cluster.

A salient feature to emerge from the interviews was the constant reference to the contextual factors – the world in which they teach.

4.3 Contextual issues

During the interviews I often found it difficult to focus the discussion on the question (questions) at hand, as the students continued to raise issues of large, multi-
level classes, poor facilities, lack of equipment and language problems. These concerns flowed freely into our discussion on each of the intended focus-areas and were generally cited by the students as reasons for under-performance in the area of especially learner performance. It appears that the students generally experienced significant difficulties regarding their locus of control (Rotter, 1966) as a result of the context in which they are required to function and, as such, the importance of context as a factor warrants further investigation in terms of the recognition of prior learning.

5. **SUMMARY**

In this chapter I started out by once again referring to the research question that led to this study in order to give focus to the discussion. I then discussed the descriptive results gained from the biographical data collected as well as the results of the pre- and post-efficacy analysis. This was followed up by a discussion of the insights I gained from a detailed analysis of the portfolios of evidence produced by the students, referring to both quantitative and qualitative data presented. Finally, the interviews conducted with nine selected students was discussed and triangulated with the insights from the other research strategies. Throughout this chapter I have endeavoured to link these findings to the contents of the literature review in chapter two, which forms the background to this study.
1. **INTRODUCTION**

The question at hand seeks to answer if the generation of evidence by teachers for recognition of their prior learning can effect a *change* in their self-efficacy as a result of the intervention by the module PSPL201. The four sub-questions posed in this research study relate to the levels of self-efficacy of the students prior to and after the intervention, what the factors may be that produced a changed self-efficacy level and also whether any change in self-efficacy is related to a skill-improvement regarding the development of work schedules and lesson plans.

2. **ISSUES OF CHANGE IN SELF-EFFICACY LEVELS**

The data generated in this study strongly suggest, with high statistical probability levels that the efficacy levels of students can be changed (and indeed, *were* changed) through their involvement with the approach used in the module PSPL201, which forms part of the B.Ed (upgrade) programme offered at the NMMU. Significantly, increased levels of efficacy were indicated via the mean scores of the pre- to post-tests. These data were accompanied by high levels of reliability (as Cronbach Alpha (α) scores and the p-values suggest that it is highly probable that the changes in the students’ efficacy levels can be attributed to the intervention of Module PSPL201. The shift in mean scores attained by the students (*n* = 123) from pre- to post-test, indicated an 11.8% increase for the development cluster, a 5.2% increase for the execution cluster and a 3% increase in the learner performance cluster. This
pattern was mirrored by the mean scores attained by the smaller sample (n = 36) from the three selected centres.

The qualitative data suggests that a factor that appears to have a strong influence in this increase is the structure of the module. This became evident from the written responses in the portfolios, as well as the verbal feedback during the focus-group interviews. The module requires three repetitions of the exercise of planning, developing and executing work schedules and lesson plans. The interview data revealed that the students regarded this to be a mastery experience (Bandura, 1994), that they experienced the examples of role models – vicarious experiences (Bandura, 1994) and that they had the opportunity to assess themselves as successful (Bandura, 1994).

It should be noted that the tutors (at the three selected centres) received much praise in the written responses in the portfolios, as well as in the interviews for their contributions to the students’ success. It should, however, be noted that contextual issues impacted negatively on especially the learner performance cluster of items.

The portfolios of evidence indicate generally higher scores for the second lesson attempt than for the first, but the reliability of this measure is open to question, as the first attempt was self-assessed and the second by a peer. Nevertheless, it is highly probable that the portfolio scores were better because the students had had three opportunities to develop the lesson plans, with assistance after each of these attempts, and – as a consequence – also the opportunity to develop the requisite skills in the development of work schedules and lesson plans. If we accept Bandura’s posit (1994) of ‘mastery experiences’ and ‘vicarious experiences’, it is probable that the efficacy levels increased in tandem with improved skills at developing work schedules and lesson plans.
3. **ISSUES OF THE APPROACH IN THE MODULE**

The underlying premise of this study, as is stated at the outset in chapter one, is that the approach adopted in PSPL201 is transformative in nature and provides a positive learning experience for the participants. As such, it appears that it is probable that the approach in the module PSPL201 contributes to the increased self-efficacy levels of the teachers involved in the programme, and that the underpinning rationale (which includes concepts such as repetition, redirection, self-, peer- and tutor assessment, reflection, rubrics, etc.) provides the supportive, learner-friendly and enabling climate aimed for by the module. The module requires no examinations to be written, and only the production of a portfolio of evidence is required. There is ample opportunity for guidance and consultation during contact sessions. This non-threatening approach fits well with the philosophy that underpins a professional approach to the concept of the Recognition of Prior Learning. Projects such as the European Union-funded Socrates project, which explored learners’ experiences of the RPL process in five European countries, found that participants in similar type programmes showed increased self-awareness as a learner, increased self-confidence, and increased self-esteem. As noted by Volbrecht et al., (2005:19):

> In every country, experience shows that some people find personally transforming the experience of trying to articulate for themselves what they have actually learned, although they did not know they had learned it. Confidence can be boosted. Aspirations can expand. Motivation for learning is often strengthened. And as the sense of self is strengthened, so the world can become a better place. Often this is referred to as the empowerment of people.

> It is for the above reasons that I believe that the approach contributes to the empowering of people, by promoting increased self-efficacy levels.
Of concern is the fact that (in this case, especially foundation phase) students who teach outside the senior phase (SP) and the further education and training phase (FET) are allowed to participate. I believe that the students who teach outside these phases were at a distinct disadvantage, and in the cases of at least two students (both of whom I interviewed) this was reflected in very poor efficacy responses.

Either the programme (module) should be adjusted to more fully include the needs of foundation (FP) and intermediate phase (IP) teachers who do not teach mathematics and/or science, or they should not be allowed into the programme.

4. ISSUES OF CONTEXT

The findings of this study strongly suggest that context has a particularly significant impact on the self-efficacy of the teachers in the RPL project, and that issues of the locus of control are of particular relevance. This relevance is demonstrated by the varying levels of efficacy-increases mentioned earlier in this chapter. During the planning phase, the teachers are generally not as exposed to the reality of their classrooms as they are during the execution phase and – more so – when they view the results of their efforts, i.e. learner performance. Consequently, the efficacy levels of the teachers increased by a smaller margin at each of these points in the process of delivery. This trend was also apparent in the qualitative responses in the portfolios and in the focus-group interviews and I believe it to be as a direct consequence of the context in which they are required to function.

As such, I am concerned that unless the issues of under-staffing, large, multi-level classes, language constraints, poor facilities and a lack of equipment are adequately addressed, interventions like the one provided by module PSPL201 will not make a lasting impact on the efficacy levels of our teachers. They may know how – in the case of this module, for example – to plan and develop work schedules and
lesson plans, and feel good about their ability to do so, but beyond that the delivery will never be characterised by high efficacy levels unless there are meaningful, positive changes in the contexts within which the educators teach.

5. RECOMMENDATIONS FOR FURTHER STUDY

The analysis of the data presented by the efficacy pre- and post-tests and the feedback I received from the portfolios and focus-group interviews indicated four important areas for further study that should make a valuable contribution to our understanding of teacher self-efficacy and the recognition of prior learning:

- Why males performed better than females in the learner performance items? My research indicated no reason why this should be the case, and the interviews I conducted did not support or refute this issue. This would involve research against the background of Rotter’s locus of control theory, incorporating the gender issue.

- The importance of phase-specific studies, for the reasons stated above.

- Issues of locus of control in students who have to operate in a previously (still?) disadvantaged context. (I believe that this is an area that requires a major focus from government.)

- Finally, and probably most important: I recommend a longitudinal study of these same teachers, involved in this study, to determine the longer term effects of the efficacy increases recorded.

As noted before, I believe that a study of this nature will indicate that context will have a negative effect over time on the (increased) efficacy levels of these students, and may reduce their improved levels of teaching and self-efficacy; that they will become disempowered to the extent that they reflect the feelings, so eloquently
expressed in the poem *Last lesson of the day* by D.H. Lawrence. “What good is this teaching of mine and this learning of theirs? It all goes down the same abyss! ... I shall sit and wait for the bell.” (De Sola Pinto & Roberts, 1972: 74)

What is, however, clear is that the module PSPL 201 does provide an opportunity for teachers involved in the programme to review and re-contextualise their prior learning with regard to the new methodologies in terms of work schedules and lesson plans proscribed by the national curriculum statement. The results of the first STEBI-test indicate that the students have mastered (to a greater or lesser extent) the new terminology. Furthermore, the qualitative data does indicate that some of the teachers report a significant improvement in their teaching practice, while others reported being more at ease with the new terminology. Both these groups report (varying degrees of) success, *despite* the context in which they teach. They have not relinquished their locus of control, but they *have* become co-participants (with the learners) in their effort to achieve the learning outcomes against the odds and, perhaps, through this, the self-efficacy gains *will be* sustained.
REFERENCES


South African Qualifications Authority (SAQA). (2002a). The development, implementation and quality assurance of RPL systems, programmes and services by ETQA’s, assessors and providers. Draft policy discussion document, Department of Education, Pretoria, SAQA.


APPENDIX A: RUBRIC: PORTFOLIO ASSESSMENT, PSPL201
The following rubric will clarify the outcomes (Assessment Criteria) and Assessment Standards (Assessment levels).


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<td>strategies and not enough different resources have been identified.</td>
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<td><strong>Planning Competency: Lesson Plan 1 (Design)</strong></td>
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<td>guidelines. This is not a plan; it is only a collection of ideas.</td>
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<td>There are obviously the strands of a plan. Some LO’s and AS’s are</td>
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<td>Lesson Plan is included but it lacks coherency (linking) and logic. With</td>
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<td>identified by may border on incorrectly identified. Learning Activities</td>
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<td>and assessments are identified, but may, in some cases borders on</td>
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<td>identified. The Learning Activities and assessment are detailed enough</td>
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<td>for a teacher to use. Possible barriers to learning are identified.</td>
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<td><strong>Planning and Creative Competencies: Lesson Plan 2 (Design)</strong></td>
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<td>No attempt at identifying the good and bad points of Lesson 1.</td>
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<td>Only superficial attempt at addressing the problems identified in Lesson</td>
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<td>Obvious that the Lesson Plan has been improved on Lesson Plan 1. But</td>
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<td>insufficient documented evidence to support the changes.</td>
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<td>Included documentation clearly indicates how the experience of design</td>
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<td>and implementation of lesson 1 influenced the design and implementation</td>
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<td>**Implementation Competency: Implementation of Lesson Plan 1 – self</td>
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<td>It is clear that this lesson was never actually implemented or the</td>
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<td>implementation was ad hoc.</td>
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<td>An attempt at the self-assessment form completion, but the responses</td>
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<td>appear to indicate that what happened in the classroom and the Lesson</td>
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<td>Plan were in no way linked. Some obvious self delusion in the filling in</td>
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<td>The self-assessment form is completed. This form indicates that the</td>
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<td>Lesson Plan was followed but adaptations, as a result of the situation</td>
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<td>in the classroom, were not adequately handled by the student.</td>
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<td>effective lesson happened or it may indicate an inappropriate lesson</td>
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<td>that was cleverly adjusted as it was being presented – based on what was</td>
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<td>happening in the classroom.</td>
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125
### APPENDIX A (Cont.)

**Implementation: Lesson Plan 2 – peer assessment**
- It appears as if nothing was learnt from the implementation of Lesson 1.

**Peer assessment**
- Peer assessment was completed but the form indicates that the Lesson Plan and the lesson presented were not well linked. This could have been as a result of an inappropriately designed Lesson Plan.

**The peer-assessment form is completed. Appears to give an accurate description of what happened in the lesson.**
- There were instances where lessons learnt in lesson one were not clearly articulated in second lesson, but this was not fatal to the implementation.

**The peer-assessment form is completed. Appears to give an accurate description of what happened in the lesson and that the design of the Lesson Plan was well suited to the lesson actually assessed.**

**The role of learner assessment in the work schedule and lesson plans**
- No assessment attempted.

**Limited assessment planned. Insufficient varied to cope with the different learning styles of learners and the material of the lesson. Either only formative or summative assessment attempted.**
- Assessment follows a clear plan. There are a number of various methods attempted to take learners into account. Too much emphasis on either summative or formative – not a balanced view.

**There is a clear plan for assessment. Summative and formative assessment is accounted for in the work schedule and the lesson plans.**

**Logical development from Learning Programme to Work Schedule to Lesson Plan to implementation to evaluation**
- It would appear as if the five elements are stand alone with no logical link between them.

**Some of the elements link to the previous and/or subsequent element. There are, however, some obvious gaps in the sequence.**
- There is a logical link between the elements but there are a few gaps in the logicality of the sequence.

**There is a logical development from Learning Programme to Work Schedule to Lesson Plan to implementation to evaluation of the lesson plan both in content, context and concept.**

**Overall Impression.**
- Poor. Hand written and sloppy, scruffy. Many spelling and grammar mistakes.

**Hand written. Limited effort at presentation. Many spelling and grammar mistakes.**
- Hand written or typed. Neat, obvious effort at neat and accurate presentation. Few spelling and grammar mistakes. No pictures on the cover.

**Typed. Orderly and acceptable presentation. No spelling or grammar mistakes. No pictures on the cover.**

**Assessor’s Discretionary Mark**
- I am not impressed at all. I feel that an effort was made but there is something missing.

**I like this portfolio, there is something here that can be developed further into a useful portfolio.**
- This is a great portfolio.

**Tutor’s Comments:**

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<tr>
<th>Late Submission (to be subtracted from subtotal)</th>
<th>Up to 1 day late</th>
<th>Up to 5 days late</th>
<th>Up to 10 days late</th>
<th>More than 10 days late</th>
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**Total:** 25/3

**126**
APPENDIX B: SCIENCE TEACHING EFFICACY BELIEF INSTRUMENT (STEBI)

SELF-EFFICACY QUESTIONNAIRE – LESSON PLANNING (2006)

Student number: __________________________________________

Centre: __________________________________________________

TEACHER EFFICACY SCALE

INSTRUCTIONS: Please indicate your opinion about each statement by circling the appropriate response at the right of the statement. There are no right or wrong answers. We are interested in your frank opinions. Your responses are confidential.

KEY: SA = Strongly Agree   A = Agree   U = Uncertain   D = Disagree   SD = Strongly Disagree

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<tbody>
<tr>
<td>1.</td>
<td>I have a good understanding of what is required to develop work schedules and lesson plans.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
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<tr>
<td>2.</td>
<td>I am continually finding better ways to design my work schedule and lesson plans.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
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<td>3.</td>
<td>I know the steps necessary to develop effective work schedules and lesson plans.</td>
<td>SA</td>
<td>A</td>
<td>U</td>
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<td>4.</td>
<td>I do better than usual when I exert a little extra effort in my lesson plans</td>
<td>SA</td>
<td>A</td>
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<td>5.</td>
<td>If learners are underachieving in my lessons, it is most likely due to ineffective lesson plans.</td>
<td>SA</td>
<td>A</td>
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<tr>
<td>6.</td>
<td>I generally execute (teach) my lesson plans effectively.</td>
<td>SA</td>
<td>A</td>
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<td>7.</td>
<td>The inadequacy of a learner’s science and mathematics background can be overcome by good lesson plans.</td>
<td>SA</td>
<td>A</td>
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<td>8.</td>
<td>The poor achievement of some learners cannot generally be blamed on their teacher’s planning.</td>
<td>SA</td>
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<td>9.</td>
<td>When a low achieving child progresses it is usually due to the extra attention given by the teacher in terms of their planning.</td>
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<td>10.</td>
<td>Increased effort planning produces little change in some learners’ achievement.</td>
<td>SA</td>
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<td>11.</td>
<td>Learners’ achievement in lessons is directly related to their teacher’s effectiveness in planning their teaching.</td>
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<td>12.</td>
<td>I am typically able to plan my teaching effectively.</td>
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<td>13.</td>
<td>Effectiveness in executing lessons has little influence on the achievement of learners with low motivation.</td>
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<td>14.</td>
<td>When a learner has difficulty understanding a concept, I am usually at a loss as to how to plan a lesson to help the learner understand it better.</td>
<td>SA</td>
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<td>15.</td>
<td>When teaching I usually welcome students’ questions.</td>
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<td>16.</td>
<td>Even teachers with good lesson plans cannot help some learners learn.</td>
<td>SA</td>
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* ADAPTED FROM THE SCIENCE TEACHING EFFICACY BELIEF INSTRUMENT (STEBI)

APPENDIX C: BIOGRAPHICAL DATA QUESTIONNAIRE

PLEASE COMPLETE THE DETAILS BELOW.

Please tick the relevant block when required and respond to the questions below. This form must please be returned to your tutor after completion.

STUDENT NUMBER: ……………………

GENDER: …………………………………………………

MALE | FEMALE

THE ENVIRONMENT IN WHICH YOU TEACH: ………

URBAN | RURAL

YOUR HIGHEST TEACHING QUALIFICATION: ……..

SENIOR | FET

THE PHASE IN WHICH YOU TEACH – 2006: ………

Gr. 7 | Gr. 8 | Gr. 9

IF YOU TEACH IN THE SP, WHICH GRADE:………

Gr. 10 | Gr. 11 | Gr. 12

IF YOU TEACH IN THE FET, WHICH GRADE:………

LANGUAGE IN WHICH YOU TEACH:………………

XHOSA | ENGLISH

POSITION IN YOUR SCHOOL: ………

TEACHER | HOD | DEPT’Y | PRINC

SUBJECTS YOU TEACH CURRENTLY: ………

MATH | SCIENCE | OTHER

NUMBER OF YEARS AT THIS SCHOOL: ………………………

NUMBER OF YEARS TEACHING MATHS: ………………………

NUMBER OF YEARS TEACHING SCIENCE: ………………………

NUMBER OF YEARS AS A TEACHER: ………………………

HOW OLD ARE YOU?: ………………………………………

TOTAL NUMBER OF LEARNERS IN YOUR SCHOOL: ………

TOTAL NUMBER OF TEACHING STAFF IN YOUR SCHOOL: ………

AVERAGE CLASS SIZE AT YOUR SCHOOL: …………………

AVERAGE CLASS SIZE THAT YOU TEACH: …………………

THANK YOU VERY MUCH FOR YOUR ASSISTANCE!
APPENDIX D: INTERVIEW QUESTIONS

1. Can you take me back to a time when you started with the module PSPL201 during 2006. Tell me how you felt about yourself generally as an educator

2. How do you now feel in relation to this now?

3. How did you feel at this time (2006) about your ability to draw up Work Schedules & Lesson Plans?

4. How do you now feel in relation to this now?

5. How did you feel at this time about your ability to execute Work Schedules & Lesson Plans, i.e. deliver the lessons in class?

6. How do you now feel in relation to this now?

7. How did you feel at this time about the performance of your pupils afterwards?

8. How do you now feel in relation to this now?

9. What factors do you think brought about this change?

10. We all operate in a given context – the world in which we work. What factors outside your control have had an impact on you?
APPENDIX E: LETTER TO STUDENTS

March 2006

Dear Student

I am currently involved in Master’s research at the Nelson Mandela Metropolitan University, focusing on the Recognition of Prior Learning (RPL) which forms part of the module PSPL201. The core question I am researching is the degree to which the RPL process promotes learning and self-efficacy. I will also be looking at the contextual factors that come into play here.

In order to effectively research this, I require access to your work in this module. Firstly, there is an efficacy questionnaire that must be completed by you on two occasions. Secondly, I require biographical information about the students in the course (see document attached), and finally, I need access to the work schedules and lesson plans you designed prior to your first contact session and will design and implement as part of the course.

I hereby request your permission to do so.

I give you the assurance of confidentiality. I require only student numbers for referencing purposes – i.e. to track any changes that may occur. At some point later in the year, I will also visit some educators in their classes, but I will approach those that I may wish to visit.

Please complete the section below, as well as the biographical details on the attached document if you give permission for me to use your work in my research.

Yours sincerely.

Neville Rudman

--------------------TEAR HERE AND RETURN THE REPLY SLIP TO YOUR TUTOR---------------

REPLY SLIP

STUDENT NUMBER: ......................................................................................................

I hereby give permission for my work to be used in the RPL research relating to the module PSPL201... YES NO

I would welcome a visit to my class.................... YES NO

Signature: .................................. Date: ..................................
### APPENDIX F: FREQUENCY TABLES

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## APPENDIX G: FACTOR ANALYSIS OF DATA

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Pre 7 |-0.716345 Post 7 0.513241 0.541481
Pre 9 |-0.582258 Post 9 0.898944 -0.136200
Pre 11 |-0.589124 Post 11 0.512043 0.380998
Expl.Var 1.716333 Expl.Var 1.337712 1.290337
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