

## CHAPTER 3

### 3 LITERATURE REVIEW

A literature review, if conducted carefully and presented well, will add much to an understanding of the research problem and help place the results of a study in a historical perspective (McMillan & Schumacher 2006, p.75)

Contents
3.1. Introduction
3.2. Contemporary Discourse in Education
3.3. A Contemporary Teacher Education and Teacher Educator Professional Development Epistemology
3.4. Researching Professional Knowledge
3.5. Learning as a Construct/Paradigm
3.6. Constructing Professional Knowledge
3.7. Application of Professional Knowledge
3.8. Modelling Professional Knowledge
3.9. Conclusion

#### 3.1 Introduction

The unit of analysis of this study is teacher educators. However, education as a whole in general, as well as education or teaching on pre-primary, primary, secondary and tertiary levels determines the nature and structure of teacher education and subsequently teacher educator professional development or professionalism. Unfortunately, as has been discussed in Chapter 1, much of the requirements of teacher educator professionalism is not explicit but has to be deduced from the demands of education and teacher education. The literature review will therefore source discourse on all the relevant levels and dimensions of education within the appropriate context. Since this research revolves around the sources and application of professional knowledge among teacher educators, teacher educators will be viewed as learners.

Some of the debates that I raise in Chapter 1 are aligned to the fact that the teacher educator profession, as all other professions has to have a knowledge base; hence the question:

where do teacher educators draw their knowledge from? This question relates to issues of quality assurance and professional bodies who ensure the maintenance of high standards.

In the next section I present the literature reviewed with regard to policies and innovations formulated by states and/or governments. There is an observation that recent educational reforms have been launched to improve education. However, they seem to be launched top down from governmental education departments. Although these developments are laudable on paper, they seem to be ignorant of the challenging demands of the super-complex world with an unknown future we are living in. However, as will be elaborated on in some sections of this chapter, some educational researchers have engaged in a new educational discourse. It addresses these new challenging demands and has also constructed requirements for a paradigmatically new corresponding curriculum and pedagogy. Examples of related teacher education programmes exist.

However, designing teacher education programmes remains the responsibility of teacher education institutions that should provide the quality of teachers required. Additionally, since contemporary education discourse suggests a paradigmatic shift in educational thinking, a discrepancy between governmental policy requirements and teacher education programmes will be inevitable. This might be particularly so if teacher education and subsequently teacher educators fulfil their responsibility in relation to the challenging demands of contemporary education. This will require courage from teacher educators to provide appropriate teacher education programmes that will fulfil the demands of contemporary education in the age of compliance. In the same way, the *education* of teacher educators will be submitted to the same risk and its consequent demand for courage.

A presentation of policy and transformation developments in various parts of the world illuminates the above arguments.

### ***3.1.1 Policies, Quality Assurance and their Implications for the Teacher Educator Profession***

#### ***3.1.1.1 Quality Assurance Frameworks and their Implications***

Research and experience worldwide, as clearly indicated in Chapter 1 of this thesis, point to general standards and/or requirements for the qualifications of teacher educators being non-existent. The major question then has been on their sources and application of professional knowledge. Closely related to this question is how quality and standards are measured in the teacher educators' profession or discipline.

An analysis of what pertains in other countries regarding qualifications and standards indicates that some education systems have in place qualification frameworks that include issues such as quality assurance. Although some of these countries, as will be illustrated in the following paragraphs, have clear policy measures for higher education institutions, it is not apparent how teacher educators are catered for in these broad national qualifications frameworks. However, it is equally important to indicate that teacher educators are classified like any other academic teaching in institutions of higher learning.

I consulted from some of the qualifications frameworks in various countries published on the Internet. The purpose is to illustrate that while, as argued in Chapter 1, professions have to be autonomous, governments or states play significant roles in order to ensure that standards are maintained and quality education is offered to learners. Presumably the intention is to ensure that the markets will receive or hire candidates of reputable calibre. I use these examples to also illustrate reactions of professional bodies as articulated in the literature to the managerial role played by governments or states.

The Republic of South Africa has policies and has instituted organisations to assume the role of implementing policies. The Wits Education Policy Unit (2005) reports that the South African Council for Educators (SACE) was established by the South African Government for purposes of recognition of teachers as autonomous professionals. As autonomous professionals they can decide on the nature of their work. Wits Education Policy Unit (2005) had undertaken a study and prepared a paper that was presented in a seminar organised by SACE in October 2005. The paper was based on document analysis and interviews. According to the Wits Education Policy Unit (2005) the Norms and Standards for Educators (NSE) were gazetted as a policy in 2000. These norms and standards

envisage teachers who are not only competent and qualified, but they also envisage teachers who are curriculum developers. In addition, the policy conceptualises teachers as researchers and knowledge creators. These have implications for teacher autonomy, which is central to teacher professionalism. The implication is that teachers are given more space to exercise their professional judgement on the materials used in class and how they are used. This means that teachers are not seen as mere technicians who should implement curriculum conceived elsewhere without questioning it or engaging with it (p.20).

While this paper does not make reference to teacher educators or academics in institutions of higher learning per se, an important message is that the role of the state is portrayed as the manager of professions. The author of the paper summarises this observation by pointing out that the policy framework appears to be out of sync with the realities of teachers on the ground. Most significantly, the paper closes with the message that “the global trends of managerialism and bureaucratic accountability, cost cutting measures seem to [be]

manifesting themselves in South Africa as well. These tendencies do not only undermine teacher autonomy, but also result in deskilling of teachers and intensification of teachers' work" (Wits Education Policy Unit, 2005, p.32). The challenge seems to be on the Governments or states playing a significant managerial role in ensuring that professional standards are adhered to, to the extent that autonomy of professions remains threatened.

A South African Council on Higher Education and Quality Committee (2007) presents the Education Qualification Framework (HEQF) and revised Qualification Framework for Educators in Schooling. It discusses a programme for the transformation of higher education in South Africa. The policy provides the basis for integrating all higher education qualifications into the National Qualifications Framework (NQF) for standard generation and quality assurance. Most significant about this policy is that it is supposed to improve the coherence of the higher education system and facilitate the articulation of qualifications. In this regard the policy enhances the flexibility of the system which presumably enables students to move efficiently over time from one programme to another in pursuance of their academic or professional careers. Furthermore, the policy applies to higher education programmes and qualifications offered in South Africa by both the public and the private institutions.

A document on the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (FHEQ) (2008) discusses the features of the framework for higher education qualifications, the relationship between the FHEQ and European development and the different levels of qualifications implementation issues and guidance. Every qualification has a title and it correspondingly reflects the level of achievement, the nature and field(s) of study undertaken and should not be misleading. In this regard, the FHEQ provides the public with a clear understanding of the achievements represented in higher education qualifications. In summary, the purpose of the FHEQ is to "enable higher education providers to communicate to employers, schools, parents, prospective students, professionals, statutory and regulatory bodies (PSRBs) and other stakeholders the achievement and attributes represented by the typical higher education qualification titles" (p.3).

The European Higher Education Area (EHEA) website (2010) stipulates that the qualification framework encompasses all the qualifications in a higher education system. Most significant about the framework is that it shows that learners know, understand what they are able to do on the basis of a given qualification and how the various qualifications in higher education systems interact and in a sense how learners can move between qualifications. It is not about procedures but it focuses on outcomes. The developers of the EHEA website, namely the Council of Europe, the Bologna Secretariat and the Coordination Group on Qualification Frameworks emphasise that qualification frameworks should be designed for purposes of

encouraging greater mobility of students and teachers and therefore should improve employability.

Australia is one of the countries that long established qualification frameworks in tertiary education. In a press release in November 2010, the Australian Minister of Tertiary Education indicated that the Ministerial Council for Tertiary Education and Employment (MCTEE) approved changes in this sector in Australia. In his view the Australian Qualification Framework (AQF) aims at providing greater clarity and transparency with regard to the expected outcomes of qualifications, enables stronger pathways between Vocational Education and Training (VET) and higher education. Taking VET subjects in schools facilitates better links between Australia and the global education market.

Other than information on overseas countries and the Republic of South Africa regarding qualification frameworks and quality in further education, there is progress in this area in some countries in the Southern African region. The Government of Botswana has two important bodies charged with responsibilities of a qualifications nature; there is a Qualifications Framework Authority and the Council of Tertiary Education. The Government of Namibia too has similar structures. With the qualifications framework the Government of Namibia has resolved to address a number of challenges including quality assurance in education and training. The decision to address education and training challenges means that standards will be set, accreditation will be addressed and that prior learning and qualifications will be recognised.

The Government of Lesotho has some initiatives towards establishing a qualification framework and a council on higher education. The draft document on the Lesotho Qualification Framework is in place. Government still has to approve this document so that it can be operational. In the context of higher education the Government of Lesotho established a Council on higher Education (CHE) in 2008. CHE has a broad mandate. It is expected to, among several objectives, provide a means for the more consistent recognition and acceptance of Lesotho's qualifications by employers and other users of qualifications within Lesotho and within the SADC Region. Towards the end of 2010 this Council launched a Higher Education Quality Assurance Committee (HEQAC) and is currently working towards developing a policy on higher education. These are steps intended to regulate higher education in Lesotho.

Robson (1998) who specifically writes on professional challenges for further education teachers in the United Kingdom makes reference to critical issues in this sub-sector. These include licences and conditions, the requirement that further education teachers should be fully trained, the growing number of part-time staff and the number of hours they teach as

well as the consequences of such developments, and the role of the state. Robson (1998) concludes by making reference to other stakeholders or players in the professionalisation process. He notes that the demand for training is “a state-led initiative with the state acting to protect its own and client interests” (p.4).

Therefore, as the literature illustrates, governments or states are justified to set standards and qualification frameworks if a nation’s education system has to be regulated. The education provided should be of acceptable quality. Students at various levels of the education systems should most importantly meet employer and national needs. However, Groundwater-Smith and Mockler (2007) observe the following:

If professional standards in education hold any promise for improving quality of teaching and learning, then it is through their capacity to foster generative and authentic professional learning that this promise will come to fruition. The capacity of any system of accreditation or review in this area lies not in the ‘quality assurance’ implicit in quantifying the professional development ‘hours’ required to be undertaken by accomplished teachers in any period of time, but rather in the process the system utilises for review and accreditation of professional practice (p.58).

Groundwater-Smith and Mockler (2007) conclude this argument by pointing out that in situations where professional standards are being used, the opportunity to view standards as a catalyst for authentic professional learning is not realised. This view implies that professionals who may be striving after adhering to set standards and administrators who have developed them and have to see to their implementation still need to find synergy.

To a large extent the establishment of councils of higher education and qualification frameworks provide situations pertaining to the concerned countries’ education systems. The information displayed on the Internet on qualifications and quality standards, while providing a useful reference point, is very broad and does not distinctly spell out how in such contexts professional standards for teacher educators are measured. Furthermore, the Internet does not distinctly provide clear information regarding procedures followed to evaluate quality and standards for teacher educators. Additionally it does not show measures or criteria used in employing teacher educators as they relate to standards and quality.

Nonetheless, a study undertaken by Gray (2010) of the University of Surrey (UK) illuminates the value of developing criteria for measuring competencies, especially as regards teachers and trainers. Gray (2010) argues that the value of having clear criteria is to ensure recruitment and career management and development of training, policy and plans. Additionally, SAQA also indicates that having a national quality assurance system ensures that education and training are delivered to certain standards. The content captured in various national frameworks indicates the value attached to having in place quality standards.

Research undertaken by Van de Groep, Admiraal, Koster and Simons (2005) confirms that worldwide the general standards and/or requirements for the qualification of teacher educators are an issue that has not yet been fully addressed. While the major question the study is addressing is on the sources and application of professional knowledge among teacher educators, the question arises as to how quality and standards of teacher educators can be measured. This is particularly important in my own context, in which some of the teachers educators who participated in this study never received any professional education to equip them with relevant knowledge or skills. Additionally, as already highlighted, quality standards have not yet been established in Lesotho. This is why employing teacher education institutions use their discretion in employing teacher educators. They do so perhaps not aware that at international level as will be illustrated later in this chapter, “characteristics of a professional” have been developed and these might serve as a guiding principle for professions and for hiring institutions.

Other than setting standards and ensuring that there are quality measures even for institutions of higher learning, governments tend to play a leading role in education developments. Governments and/or states tend to ensure that education does not suffer say for example, from lack of teachers or lack of qualified teachers. Developments in this regard have been observed in a number of countries including the United States of America. The US Government implemented the Teach for America Programme and/or policy as an innovation aimed at addressing education ills.

### 3.1.1.2 Transforming Education Systems and Implications

The Teach for America (TFA) Programme and/or policy is described as an alternative teacher certification programme. It is designed for adults with college degrees in a variety of backgrounds and majors. These would be individuals who would be interested in entering the teaching profession (Wetzel, 2009). Wetzel indicates the following:

Teach for America Corps Training Programme’s mission is to prepare recent college graduates from all backgrounds and career interests to become successful teachers. This adult education programme is designed to prepare adults to become educators in low-income communities in both urban and rural public schools. Adults entering this alternative teacher education programme make a two-year commitment to gain an understanding of the inequities that exist in school around the country (p.1).

Presumably the US Government’s decision in coming up with the programme was to address the problem that the country was experiencing. The programme was designed to give trainees the foundational knowledge, mindset, and skills needed to become highly effective beginning teachers. The strategy employed is to offer the trainees a five-week training that focuses on broad issues such as teaching, observation, coaching, study, planning and self-

reflection (Wetzel, 1992). The Teach for America Programme is therefore considered to be a reform.

Information gathered from various sources, particularly the Internet, indicates that there are different views about the programme. There are those who are against the programme and some are in support of the initiative. Criticisms come from qualified teachers and other stakeholders, including education professors as exemplified by this submission: *“I dislike TFA because I am a teacher, and I am quite clear that you don’t learn to teach in five weeks, much less teach students who have a range of social, economic and developmental problems; who are often hungry ... and who come in unruly waves of 40-50 every 45 minutes”*.

There are other reasons for criticising the programme. These include:

- the fact that it is not so much about reforming schools;
- it is not bringing about permanent investment in schools and cannot be regarded as a reform;
- the trained personnel do not stay in teaching;
- it has not helped to build permanent corps of excellent teachers who can train other career teachers or use their classroom training to become effective principals;
- they (TFA teachers) are not committed to teaching as a career given that it is a stopgap before, for some, registering in a law school;
- TFA teachers take jobs away from veteran teachers.

Responses of those who are in the programme indicate that the Teach for America Programme has benefits. Their comments indicate that they have learned from the programme through being attached to a mentor teacher. They indicate the feeling that there is probably no need for a pedagogy lesson; the programme has retained some for life; it is less expensive compared to full-time training over stipulated periods of teaching; they become apprentices for certain periods; and that having an impact on students taught and helping with the retention of the corps.

Although there are different views about the programme, an analysis of studies undertaken on Teach for America revealed that there are more benefits. Studies were carried out at the pre-primary, the primary and the secondary school levels. The following are some key findings of the said studies:

#### *Studies at the High School Level*

- Teach for America corps members had a greater impact on student achievement than did traditionally prepared teachers from UNC’S teacher preparation programme in middle school math, high school math, high school science, and high school English (Henry & Thompson, 2010);



- Teach For America corps teachers are more effective than other teachers, including experienced teachers and those fully certified in their field (Xu, Hannaway and Taylor 2008-2009);

*Studies at the Elementary School and Middle-School Levels*

- Students for Teach for America corps members attained greater gains in math and equivalent gains in reading versus students of other teachers, including veteran and certified teachers (Decker, Daniel, Mayer and Glazerman, 2004);
- Teach For America corps members in Louisiana outperformed other new teachers with the same level of experience and were as effective as veteran teachers across the state in math, science, reading and language arts (Boyd, Grossman, Hammerness, Lankford, Loeb, Ronfeldt and Wyckoff, 2009); Morgaen, 2008).

*Studies at the Pre-K Level*

- Pre-K students in Washington D.C Teach for America corps members made significant progress in vocabulary, letter recognition and easy math skills (Zill, 2008),

*Studies on Corps Members' Qualifications and Retention*

- Teachers recruited through Teach for America and the NYC Teaching Fellow significantly reduced the gap in teacher qualifications between the city's high-and low-poverty schools and contributed to student achievement gains that were most substantial in the city's highest-poverty schools (Boyd, Lankford, Loeb and Rockoff, Wyckoff, 2007).

*The Project on the Next Generation of Teachers, Harvard Graduate School of Education*

- Sixty-one percent of Teach for America corps members continue to teach beyond their two-year corps commitment. This retention rate is similar to retention estimates for other new teachers in low-income communities. The study also found that 44 percent of corps members remained in their placement schools beyond their two-year commitment (Morgaen, 2008).

Research-based information as indicated in the preceding paragraphs clearly shows that there are positive views about the Teach for America corps programme in the US schools. The research falls short of presenting research findings to the contrary. The research presented paints a glossy picture of the programme. Therefore, while the research findings cannot be disputed on the basis of the summarised presentation on the internet, the presentation shows a bias towards the positive impact of the programme. However, some research work has been conducted that illustrates the relationship of innovations in the context of education as these relate to teacher education.

One of the researchers whose work relates to the Teach for America Programme is Haberman. In one of his writings he makes reference to a common saying that education does not make up for experience (Haberman, 1976, 1997). He interprets this statement to mean that experience provides for more opportunities to gain knowledge and skills. The implication of statements such as this one is that academic education may neither be sufficient nor a necessary condition for effective teaching or management of schools. However, his analysis of the statement is that there definitely is a gap between attaining propositional knowledge and acquiring practical knowledge from experience.

Haberman's work also focuses on issues of star teachers among other areas in the field of teaching. Star teachers develop attributes that make them effective regardless of conditions that could otherwise contribute to ineffectiveness. They therefore survive in conditions that under normal circumstances would deter teachers from serving in poor and usually difficult urban schools. Haberman (2004a) illuminates characteristics of star teachers as broad and encompassing.

The characteristics of star teachers include their moral character such as persistence, physical and emotional stamina and ethical issues, which include focus on learning in the work place. Haberman (2004a) argues that star teachers tend to: protect student learning, translate theory and research into practice, cope with the bureaucracy, create student ownership, engage parents and caregivers and partners in student learning and support accountability for at-risk students. He further indicates that these "attributes predict the effectiveness and staying power of teachers serving diverse students in low-income schools. ... " (p.3). Hence the relationship of his work to that of the Teach for America programme.

A contributory factor to these attributes is the fact that teachers being referred to have the freedom to express their views on issues that pertain to their professional activities. They are capable of analysing situations that will not add value to their work. While they value participating in learning communities, star teachers tend to analyse such communities for purposes of establishing the extent to which they can contribute to "developing the faculty as a necessary condition of school improvement" (Haberman, 2004a, p. 4). There is therefore an acknowledgement that innovations and schools can succeed in situations where teachers are effective. Evidence of the extent to which success is based on effective teachers is drawn from Haberman himself. He engaged in work in which he assisted failing schools through engaging teachers who would make a difference (Haberman, 2011) in those schools.

Haberman (2004b) observes that there are numerous challenges that impede government's initiatives. He contends that, regardless of challenges that tend to affect government's

initiatives, there are schools that succeed. Successful schools in his view have a number of attributes. These attributes include having a critical mass of star teachers whose work tends to contribute to the success in implementing initiatives.

Most critical about the output of Haberman's work is the fact that Star Teachers benefit from learning from the context in which they work. These contexts in his view empower teachers. For example, a typical learning environment is one that is cognisant of the fact that teachers, as faculty, have a role to play in their own learning.

There are other researchers who share Haberman's views regarding empowering teachers or teacher educators so that they learn from their practice and/or research experiences especially in the school context. These include Lingard and Renshaw (2010), Broadhead (2010) and Hulme and Cracknell (2010). For example, Broadhead in her study on insiders and outsiders researching together to create a new understanding and to shape policy and practice, studied the literature in the area of policy reforms and research. She concluded that books reviewed had the potential 'voices' of policy shaping. Having undertaken the study that brought together teachers at the school level and herself as an educator and a researcher she made further conclusions. One of these is that besides the two (herself as a researcher and the teachers) having gained substantial knowledge in engaging in the research, she had "made the greatest leap forward towards understanding ethical practice and towards the realisation that research can only shape policy and practice if ethical and political awareness go hand-in-hand with collaborative educational research" (p.51). In essence, Broadhead (2010) sees the relationship between governments' transformation initiatives and engaging in research that assists in implementing policies and in the process learning from that experience.

An analysis of the work of Haberman points to the impact of programmes and initiatives that aim at providing teachers the opportunity to learn in the context of their work. He has tested the impact of initiatives that have succeeded in addressing issues of an educational nature. Haberman's work seems to challenge teacher educators not only to learn from such initiatives but also to venture into testing them in their own programmes and/or institutions or, as was the case with Broadhead, in the context of research. In essence teacher educators are challenged to look into providing student teachers with opportunities to test new ideas in the context of teacher education.

Transformation at the school or college level has also been realised in other parts of the world. The Republic of South Africa and the United Kingdom are cases in point too. South Africa introduced outcomes-based education under the auspices of Curriculum 2005. This reform in the context of the country was aimed at changing the Apartheid type of education

system. Jansen in 2010 discussed what he described as the “not-so-obvious damages” of Outcomes-Based Education. He mainly talks about costs. Jansen points out that the most critical result of Outcomes-Based Education is with regard to human costs. In his view,

Children already disadvantaged were exposed to a curriculum that made a fragile learning environment worse. Instead of learning those vital competencies of reading, writing and calculating, they were exposed to high-brow constructivist theories that kept many of them illiterate. Those effects not only forced many to leave the school system, they pushed weaker and weaker students into universities where they again struggled to succeed (p.1).

While there may be benefits resulting from introducing OBE in South Africa, the messages coming from the literature reviewed in this area points to problems experienced. One of the major problems is with regard to the impact of political decisions in education systems.

During the 1980s and 1990s education reforms were, experienced in the United Kingdom too. This was particularly so during the presidencies of Margaret Thatcher and John Major. Documentation on the deliberations between the Secretary of State for the Social Services and the Secretary of State for Education in 1970, revealed that Prime Minister Thatcher had a view that “provision would have to be made in future for teacher training and other types of further education to be provided not just as an immediate sequel to primary and secondary education but as something to which people could return, with a view to specific training, after a period in employment” (p.6).

In a paper presented in 2000 in a seminar, Witty reports on the policies that were introduced during the Thatcher regime. The new policies were, among others, intended to address the Labour Party concerns. The development of policies on General Teaching Council and Performance Management/Performance-Related Pay sought to combine techniques with “greater respect for the professionalism of teachers, albeit a ‘modernised’ professionalism” (Witty, 2000, p.4).

There are dilemmas associated with policies developed by national governments or states in the context of education. Governments may have as their priorities addressing market demands through legislature. Yet the markets, as Whitty (2000) observes, may not embrace the new developments. There seems to be a clash between what governments prefer in their policy deliberation as they transform education systems and developments and what the professionals themselves would see as pertaining to their practice. The views expressed by Furlong, Barton, Miles, Whiting and Whitty (2000) illustrate problems experienced in reforming professionalism in the context of teacher education. This, as I indicated in Chapter 1, entails knowledge, autonomy and responsibility or accountability.

Secondly governments develop policies and establish education councils in which quality standards are set. These too are intended to ensure control measures. Groundwater-Smith and Mockler (2007) report on professional standards in teacher education as common practice in the western countries, particularly in the UK, the US and in Australia. These authors observe that setting professional standards for teachers is itself not a bad idea. However, standards and standardisation viewed as the “one size fits all”-agenda is problematic. It tends to be regarded as a panacea for an ailing teaching profession.

Whereas there are varying views about government’s roles in setting standards and qualification frameworks and in transforming education systems, teacher educators as professionals have a responsibility too. Teacher educators have to find ways of setting appropriate standards in ways that will be universal and commensurate with possible yet unknown future demands. I argue here that governments and states constantly think of reforms and continue to implement those in the school systems, regardless of whether or not teacher educators infuse those in the teacher education programmes. It is therefore within the context of the challenging demands of an unknown future that education, teacher education and subsequently teacher educator professional development have unavoidably entered unfamiliar territory. The unfamiliar territory referred to here can be associated with contemporary discourse in the education context.

### **3.2 Contemporary Discourse in Education**

There can be no doubt that a new discourse in education is emerging. The main thrust of the discourse is in the area of quality in education and subsequently enhanced teacher professional learning and development. These current developments are many and varied and are taking place all over the world in countries like, USA, UK, Canada, Australia, Scotland, the Netherlands, Continental Europe and South Africa to various extents, from small scale projects to large projects. What I am attempting in this section of Chapter 3 is not to exhaust this field of study, but rather to highlight some of its main features as they occur within education as an umbrella discipline and to construct it into a framework that would be beneficial for the research to be undertaken.

The world, and presumably education as well, is currently witnessing one of the most significant shifts in human history. Drucker (2000) points out that the paradigm shift is characterised by an unprecedented change in the human condition. Unfortunately, this exhilarating prospect of unprecedented change in the human condition has been thwarted. In fact, Fielding (2007) reports that in England “secondary schooling is conducted in a mindset that is dangerously anachronistic and deeply superficial” (p.5). Groundwater-Smith and Mockler (2009) concur that it is the same “in most Australian States and territories and many

parts of North America” (p.78). In view of the recent Progress in International Reading Literacy Study (PIRLS) and Trends in International Mathematics and Science Study (TIMSS) research reports, there is enough reason to believe that this poignant condition might be a global phenomenon. One of the primary causes of this demise is that educators have been deceived by the strong emerging culture of compliance within which quality is trivialised because quality assurance processes may easily result in the *perception* of quality rather than the demand and provision of actual quality itself.

Groundwater-Smith and Mockler (2009) describe what is necessary in education to escape the paralysing compliance effect:

While the culture of compliance ... increasingly draws us to an approach of teacher professional learning that is ‘training’ orientated, quantifiable and easily measured or ‘ticked-off’ for quality assurance purposes ... for teacher professional learning to serve the burgeoning needs of students and their teachers in the twenty-first century, we must value and vigorously pursue an alternative model ... Putting the need of young people and indeed the transformational dimensions of education at the heart of professional practice requires courage and willingness on the part of educators to be deeply countercultural ... (pp.10-12).

In fact, Dreyden and Vos, (1999) in writing about change indicate that “the seismic scope of this change forces us to completely rethink everything we’ve ever understood about learning, education, schooling, business, economics and government” (p.21). Consequently, education for the future requires a new discourse. Hargreaves, (2003) in concurring with Dreyden and Vos (1999) is of the view that the “future poses radically different challenges to those placed at the foundation of educational systems and that is why we require a qualitatively different approach to teaching in the twenty-first century” (p.x).

Hargreaves (2003) sees three challenges highlighted below:

- demands **on** young people;
- demands **of** young people;
- demands on **how we teach**.

I will address each of these demands to the extent the scope of this research warrants it.

### **3.2.1 The Demands on Young People**

The demands **on** young people pertain to WHAT we teach. A very generally accepted traditional perception of education in a very simplistic sense is to teach learners the knowledge which they need to make sense of the world. It means that knowledge such as that found in textbooks already exists and that the learners need to know it. It is an education

characterised by teaching learners so that they will know the necessary knowledge, skills and values that already exist.

In a simplistic, static world this would be a very worthy cause and aim of education. However, the world is not static and the knowledge or information is increasing rapidly. During the era of the information revolution, the abundance of information causes knowledge overload. Over a very short period of time, the exponential increase of knowledge causes information ignorance because of the sheer abundance of knowledge that exists but which cannot be accessed by an individual even in a lifetime (Barnett, 2007). This makes the world extremely complex. To make sense of this complexity, educationists deem it useful to divide the knowledge into smaller groups called disciplines. However, the dire consequences of such fragmentation can only really be appreciated if it is presented in its original, somewhat lengthy quotation from the work of Bohm (1990).

It is especially important to consider this question today, for fragmentation is now very widespread, not only throughout society, but also in each individual; and this is leading to a kind of general confusion of the mind, which creates an endless series of problems and interferes with our clarity of perception so seriously as to prevent us from being able to solve most of them. Thus art, science, technology and human work in general, are divided into specialities, each considered to be separate in essence from the others. Becoming dissatisfied with this state of affairs, men have set up further interdisciplinary subjects, which were intended to unite these specialties, but these new subjects have ultimately served mainly to add further separate fragments ... The notion that all these fragments are separately existent is evidently an illusion, and this illusion cannot do other than lead to endless conflict and confusion. Indeed, the attempt to live according to the notion that the fragments are really separate is, in essence, what has led to the growing series of extremely urgent crises that are confronting us today. Thus, as is now well known, this way of life has brought about pollution, destruction of the balance of nature, over-population, world wide economic and political disorder, and the creation of an environment that is neither physically nor mentally healthy for most of the people who have to live in it. Individually there has developed a widespread feeling of helplessness and despair, in the face of what seems to be an overwhelmingly mass of disparate social forces, going beyond the control and even comprehension of the human beings who are caught up in it (pp.1-2).

Following on Bohm (1990) it would seem that the external environment is being destroyed at an alarming rate. Consequently, our internal environment suffers and a snowball effect and self-fulfilling prophecy seem to be reigning. The demand on young people is to get us out of this mess because they are inheriting it. The resolution for this challenge is only possible through extraordinary novel ways and means.

To aggravate the observed situation, the overwhelming abundance of knowledge currently available, especially on the Net even if all of it could be accessed does not suffice in attempting a resolution to our irresolute destruction. The reason might be that this knowledge could have been posted on the Net by anyone ranging from an uneducated ignoramus to a phenomenal expert. This knowledge is subsequently always contested because it does not

carry a tag that guarantees its value or integrity. These developments make the world super-complex (Barnett, 2007).

Existing knowledge is therefore insufficient to make sense of our rapidly changing world, because it is effectively knowledge of the past. In addition, knowledge of the future does not exist. It is difficult not to rely on anything that is in existence to make sense of the super-complex world given that the future remains unknown. Grulke (2000) describes the current situation as “the revolution of the empowered individual” (p.3). But, paradoxically, our individual, contested constructions of the world cause not only external uncertainty but a serious internal uncertainty which shakes our sense of being. Human beings find themselves living in “an anxiety-ridden age of insecurity” (Hargreaves, 2003, p.28) and a subsequent “absurd psycho-drama of self-destruction” (Slattery, 1995, p.248). Vail (1999) is of the view that:

the rise in insecurity in contemporary society ... has been immensely destructive of human potential and social justice. Insecurity damages individual lives, it destroys self-worth and self-esteem, and it has generated intolerable levels of fear, anxiety, hopelessness and powerlessness (pp.3-4).

Even though all the knowledge is out there and easily accessible by virtually anyone (including young people at anytime in the abundance that they choose, even without a teacher) it is unreliable to the extent that it is always contested. One may ask: what is the resolution of education for this debilitating disillusionment? Barnett (2007) is adamant when he warns in this regard: “Learning for an unknown future cannot be accomplished by the acquisition of either knowledge or skills ... neither domain can carry the day in a world of uncertainty” (pp.258-259).

Although this is not the last word said about knowledge and skills in education, I interrupt the argument at this stage to emphasise that the demands **on** our young people is a case of a self fulfilling “double jeopardy”. Not only are these post modern youngsters already caught up in a state of insecurity, the best resolution education seemingly has on offer as well as what is available outside of education are unreliable knowledge and skills.

It should be obvious that this condition places unique demands on young people, which, at the same time, produces the demands **of** young people.

### ***3.2.2 The Demands of Young People***

It is important first of all to consider the result of the experiences of young people in this condition of disillusionment.



Although there may be arguments to the contrary, Jukes and Dosaj (2006) believe that ‘kids of today ARE different! ... Really different! ... fundamentally different from previous generations’ (pp.2-3). These are some of the reasons for the observed difference:

They have lost their trust in all authority which is currently still represented by adults in general – past, present and future authority is out because it is that authority that has plunged the world into the self-destructive state that it is in.

Because they have lost their sense of being, their frame of reference is nothing in particular – it is “whatever”: Whatever is important to them at any particular moment for as long as that moment lasts.

Instant gratification is their primary concern.

Their relationships are face-to-screen relationships – even when they are sitting next to one another.

They have become exceptional in visual-spatial dynamic information processing: up to 70% faster than adults, being and increasingly becoming the intellectual superiors of many adults – including teachers.

They are digital experts for whom multitasking has become second nature.

They adore new things, new innovations that challenge them and will emerge in their exploration until they become bored.

Technology has therefore become their refuge: with the touch of a button there is immediate response. Therefore they trust technology more than humans.

This has caused the fact that they unfortunately have become socially and emotionally detached.

They deal with human beings in the same way that they do with technology: Switch to another channel if you bore or agitate them or switch you “off” for that matter.

Human dignity and exploitation have become a commodity in all areas and on all levels of socio-economic society: Cyber bullying, happy slapping, knifing, and the many other modes of unprovoked, intentional and deliberate human-on-human abuse are captured on electronic devices and posted on the internet even as a commodity for sale. The higher the resolution, the better the sound, the longer the clip and the more extreme the violence, the higher the price (De Villiers, 2006; Juke and Dosaj, 2006). This information is based on student teachers’ experiences written in their reflective journals during their school based learning periods, 2008-2010). Although this is a generalised, bleak and perhaps even an eschewed picture of post modern youth, some might claim, its destructive potential can never be

underestimated because educators are already witnesses thereof. However, neither these youngsters, nor their teachers are necessarily to blame. Instead, one has to recognise their mute utterance of a desperate cry to be rescued. It would seem that their unexpressed demand in an overall sense is a call for restoration of their sense of being.

The challenge though, is that their outcry can be addressed by anyone. Doing anything for them would mean doing it for them and/or on behalf of them. Yet only they themselves can do that. A critical challenge for teachers given that they have an inherent human potential should be to create the most powerful learning environment. The creation of that powerful learning environment will demand that they earn it.

### **3.2.3 The Demands on how we Teach**

Although this section deals with the demands on **how we teach** the issue on exactly **what** to teach has not yet been established. What has been concluded, though, is that knowledge and skills cannot be the focus of teaching. However, the acquisition of knowledge and skills in education is indisputable. But, as argued by Barnett (2007), policy makers cannot begin to offer us a sufficient set of ideas for education in the twenty first century. “At best ... they offer us just two pillars of an educational project ... By themselves, these two pillars, ... will topple over: they need (at least) a third pillar – the ontological pillar – to ensure any kind of stable structure” (p.7). This third indispensable ontological pillar is characterised by dispositions and qualities and is durable in its nature.

Moreover, “they constitute the student’s pedagogical being. It is they that have to be the focus of ‘teaching’...” (Barnett, 2007, p.102). It is, as Barnett (2007) further argues, through their dispositions and qualities that students have the capacity to acquire both knowledge and skills. Furthermore, it is through their qualities and dispositions that they become themselves (Barnett, 2007). With this significant statement, Barnett (2007) reveals the key concept in the deep ontological structure of education, namely authenticity. Although this may seem a somewhat philosophical perspective towards education, “it is crucial to getting to grips with what it is to be a student in the contemporary world and with what kinds of human being are appropriate, indeed called for, in a contemporary world that is full of perplexity” (Barnett, 2007, p.3). However, as Barnett (2007) points out, an education that does not call and does not insist on authenticity in the learner is no education.

Correspondingly, an education that calls for authenticity in students’ needs must necessarily be characterised by **authentic pedagogy**. This is a pedagogy that require learners to “become ‘active learners’, capable of solving complex problems and constructing meaning that is grounded in real-world experience” (Newman, Marks and Gamoran, 1995, p.1). This kind of authentic learning “calls for a transformatory curriculum and pedagogy ... This is a

curriculum that is aimed at the transformation of the human being; nothing less” (Barnett, 2007, pp.256-257).

In designing curricula, there is a need to recognise the demanding challenges of the post-modern era we are living in. There is need to, according to Slattery, (2006):

move from the modern paradigm of curriculum development in the disciplines to the post modern paradigm of understanding curriculum in various contexts in order to move toward ..., the construction of the individual in relation to educative moments, the development of autobiographical, aesthetic, intuitive, and proleptic experience, and the socio-cultural and socio-political relations emerging from an understanding of the individual in relation to knowledge, other learners, the world, and ultimately the self (p.292).

It is important to emphasise that learning is the pivotal constituent that qualifies education as education. Correspondingly, recent developments in psychology, experimental psychology, cognitive science, neuroscience and associated fields have revealed a new conceptualisation of learning that has turned our conventional corporate and educational wisdom on its head (Claxton, 1999, p.10). These developments have confirmed that the biological and physiological functioning of the brain supports the fact that authentic learning is essentially radically socio-constructivist in nature (Heyligen, 1997; Boylan, 2005; Von Glasersfeld, 2001).

Authentic learning also means that human beings are born to learn (Smilkstein, 2003) and are subsequently able to solve complex problems grounded in real-life experiences. To accomplish this feat, human beings are endowed with a multi-dimensionality in the form of more than ten multiple intelligences (Sternberg, 2007 and 2008; Gardner 1997, 2004; Goleman, 1995; De Beauport, 1996; Zohar and Marshal, 2000; Bar-On, Maree and Elias, 2006). These multiple intelligences could be categorised into four intelligence domains, namely physical intelligence (PQ), mental intelligence, (IQ), emotional intelligence (EQ) and spiritual intelligence (SQ). These intelligence domains are not only at our disposal for authentic learning itself, but the added competence of being in complete control and therefore management of our authentic learning through metacognition (Flavell, 2004), metalearning (Slabbert, 2002; Slabbert et al., 2009) and self-regulated learning (Zimmerman, Bonner and Kovach, 1996) as competences to improve the quality of authentic learning (Sternberg, 2008).

What makes us really unique, however, is not our multidimensionality, but the incredible potential, encapsulated in our human virtues, each and every one of us is endowed with. These virtues compose our holistic nature. Life and the world present itself holistically and not fragmented into bits and pieces. That is why we have been endowed with a holistic nature to live a prosperous life within the challenges it presents. Our asset is our

consciousness. Consciousness is our experience of life and the source of all meaning, value and purpose in our lives and in the world (De Quincey, 2005). Authentic learning as “the growth of consciousness is possible if the factors responsible for the integrity of all inseparable constituents of human individuality, that is, **body, mind, soul,** and **spirit** are simultaneously activated” (Dimitrov and Wilson, 2002, p.6). This natural multidimensional holistic interactivity provides the wisdom we need to create a safe sustainable and prosperous future for all (Sternberg, 2003, 2008; Craft, Gardner and Claxton, 2008, Slabbert et al., 2009).

However, we are not alone in the world, but we share it with others. As noted by Jacobs, Power and Loh (2002), since people share the same life in the world, there is an inevitable sociological relationship which, in education, is manifested in a sociological nature of knowledge. This is manifested in cooperative learning.

Acknowledging that learning is not about finding things, but it is about finding ourselves (Purpel and McLauren, 2004), then metalearning will reveal our identity and cooperative learning our integrity. But what is of crucial importance is that this can only happen in community and within the context of authentic learning. It has to be a community of authentic learning practice.

It would be difficult to comprehend learning outside the realm of truth being a very contentious issue, especially in education. What makes it so contentious is the proliferation of absolute relativism in the post-modern context, and, towards its opposite pole, the reigning of mythical objectivism through positivist exclusion. However, Purpel and McLauren (2004) state very clearly that “the crises that we face today will not abate until we have found a way to wisdom” (p.203) and wisdom is the love of truth. Our conception of truth is therefore encapsulated in the Greek word *Aletheia* meaning unconcealment, exposure or uncovering. Or in the more concrete description of Palmer (1998): “truth is an eternal conversation about the things that matter, conducted with passion and discipline” (p.104).

Therefore, the firmest foundation of learning is the **community of truth**. It enhances the quality of learning through conflict. It is in our willingness to put forward our observations and interpretations for testing by the community and return the favour to others. Conflict is the dynamic by which we test our constructions in the open in a communal effort to stretch one another and the constructions we create. As pointed out by Palmer (1998), we submit our assumptions, our observations, and our constructions indeed, ourselves: our identity and integrity to its scrutiny.

Such an education, as indicated, requires a unique curriculum and pedagogy. It should be a paradigm not of outside-in (teacher to learner) but inside-out (learner to real life). It should be

a curriculum, not of learning to know, but of learning to be. It should be a pedagogy, not of the transmission of knowledge, but of facilitating learning in such a way that the learners will maximise (completely develop and fully utilise) their potential. This is encapsulated in essential human virtues that generate the power and will to fulfil their purpose of life.

However, the concept of facilitating learning as a proposed pedagogy to achieve the aim of authentic learning is clouded with gross misconception. In the literature it includes anything that is educational, from accurate imitation and transmission of knowledge to projects and research.

When Rooth (2000) defines facilitating learning as “not teaching, not telling, not lecturing, not preaching, and not directing” (p.35) and subsequently *not* employing the myriad of teaching methods, she points out that facilitating learning is something ***distinctly different*** from teaching. Secondly, “central to the definition of teaching as facilitating learning is the shift of focus from the teaching process to the learning process that happens in the mind of the learner. If so, the ultimate measure of excellence in teaching is the quality of learning that it leads to” (Mohanani, 2005, p.1). This means that the ultimate measure of excellence refers to the quality of the learning that is the primary focus of facilitating learning. Facilitating learning is therefore ***qualitatively different*** from teaching.

Finally, “[T]he problem is that teachers think that if they “teach”, students learn (Sternberg, 2008, pp.143-144) which is obviously not the case. Subsequently, “if the teaching activities do not result in learning, there has been no teaching. Likewise, if the learning is lacking quality, the teaching is unsuccessful to that extent” (Mohanani, 2005, p.2). Since teaching does not have learning as its conscious, singular focus, consequently it is incapable of ensuring learning quality; the concept of ***teaching cannot be justified*** in education. The contemporary discourse in education, therefore, discards the concept of teaching within the context of authentic learning because of its irreconcilability with the challenging demands of an education within a super-complex world with an unknown future and replaces it with ***facilitating learning***.

Facilitating learning is a *unique* professionalism with very distinctive characteristics regarding its purpose, functions, requirements, actions, and options. In fact, in a very concrete fashion and a significant sense and as argued by Slabbert et al. (2009) facilitating learning is the direct opposite of the concept of teaching. As indicated in the preceding paragraphs, the traditional sequential concept that learners must first be taught to *know* something (knowledge), then they will be able to *do* something (skills) with what they know and that will result in what they will *be* (values) someone with moral authority is fundamentally flawed. In fact, as Buscaglia (1996) points out, some of the wisest people who have the fewest answers

and the least amount of certainty have found that the most important thing about knowledge or learning is not the knowing, but the seeking. The seeking (skills), therefore, effectively precedes the knowing (knowledge). But it is our primary motivation in life, our desire for meaning (*be*: the values which allow us to live a meaningful life), that propels our search for meaning (*do*: knowledge constructed *personally under conditions that make it meaningful*) into action and that subsequently has the construction of knowledge as a result (*know*: a temporal fruit of being). It is our authentic being as a perpetual desire for meaning that requires an opposing paradigm: Not a know-do-be, but a be-do-know curriculum and pedagogy of living real life. This is why Dewey (1938) is one author who insists that education is not a preparation for a future life, but that it must be an experience of life itself.

This brings one to the question of what the core business of education in this context should be. Contemporary research in learning and instruction and in particular instructional psychology, instructional design and instructional technology proposed new theoretical frameworks in the design, implementation and evaluation of powerful learning environments (De Corte, Verschaffel, Enwistle and Van Merriënboer, 2003). This development has prompted the realisation of what the core business of education and subsequently that of the teacher educator is, namely to design, operationalise (or implement) and maintain the best possible learning environment in order to ensure the highest possible quality of learning.

The developments in all the mentioned intersecting research fields are obviously characterised by similarities and differences. Although there are differences, it seems as though there is some consensus about what has become a matter of primary importance: “Now, it becomes important to answer the question how to design and develop powerful learning environments in an efficient and systematic manner” (Van Merriënboer and Paas, 2003, p.18). Van Merriënboer and Paas, (2003) purport that

In the last decade research has been conducted on the necessary characteristics of powerful learning environments. These include: (1) use of complex, realistic and challenging problems that elicit in learners active and constructive processes of knowledge and skill acquisition; (2) the inclusion of small group, collaborative work and ample opportunities for interaction, communication and co-operation; and (3) the encouragement of learners to set their own goals and provision of guidance for students in taking more responsibility for their own learning activities and processes (p.5).

The world of work has become central in designing, implementing and evaluating powerful learning environments. “Learning tasks nicely fit the ideas that are prevalent in the world of work. Learning tasks are concrete, authentic and meaningful real-life experiences that are provided to learners” (Van Merriënboer and Paas, 2003, p.9). However, these concrete, authentic and meaningful real-life challenges present themselves in their uncompromising complexity and will subsequently constitute the highest possible quality of learning.

The issue of trivialised quality through compliance that creates the perception of quality as opposed to actual quality itself has been addressed in the opening sentences of this section of Chapter 3. What actual quality explicitly entails has therefore grossly eluded the pages of research literature. Fortunately the groundbreaking work of Furlong and Oancea (2008) has brought a more concrete perspective on actual quality in education. In their response to the said work, Groundwater-Smith and Mockler (2009) state that the overriding criterion governing quality is to be ethical in professional practice. I cannot agree more with them when they say: “clearly, for us, recognising the relationship between quality and ethics is no trivial consideration ... As we have argued, ethical practice is the essential foundation upon which authentic quality enterprises are built” (p.69).

Education, no doubt, has to be such an authentic quality enterprise. Unfortunately the different needs of different kinds of learners in different kinds of contexts may differ vastly, which may complicate what actual quality will entail. The challenge therefore is to design an authentic quality education that will encompass all kinds and levels of learners irrespective of place and time. Such an educational enterprise may be characterised by its aim. Therefore, if the aim of education is to maximise (completely develop and fully utilise) human potential through facilitating lifelong authentic learning in order to create a safe, sustainable and prosperous future for all, as Slabbert et al. (2009) suggest, actual quality is clearly expressed with an educational aim that could be regarded as universal. Actual quality education is therefore characterised not by how much you know, but how well can you learn. That is why Heidegger (1962) is of the view that the real teacher is one who lets nothing else be learned than learning. The product of education is therefore not primarily an epistemological task (*knowing* something), but an ontological challenge (*being* the best possible learner *employing* the highest possible quality of learning – doing - in order to *produce* the highest possible quality of knowledge – knowing).

One may ask: what does the highest possible authentic quality in education constitute? This has been a hidden secret in plain sight because of the deception of compliance standards. Table 3.1 indicates what quality generally constitutes authentic learning.

In table 3.2 the work of several authors has been compared in order to reveal how their work relates to authentic learning quality. These authors include, Dewey, 1944; Vygotsky, 1978; Joyce, Weil and Showers, 1992; Miller, 2003; Engestrom, 2004; Darling-Hammond and Bransford, 2005).

Finally in Table 3.1 authentic learning quality is indicated by comparing four education paradigms. The first three depicted models in education, namely transmission, transaction

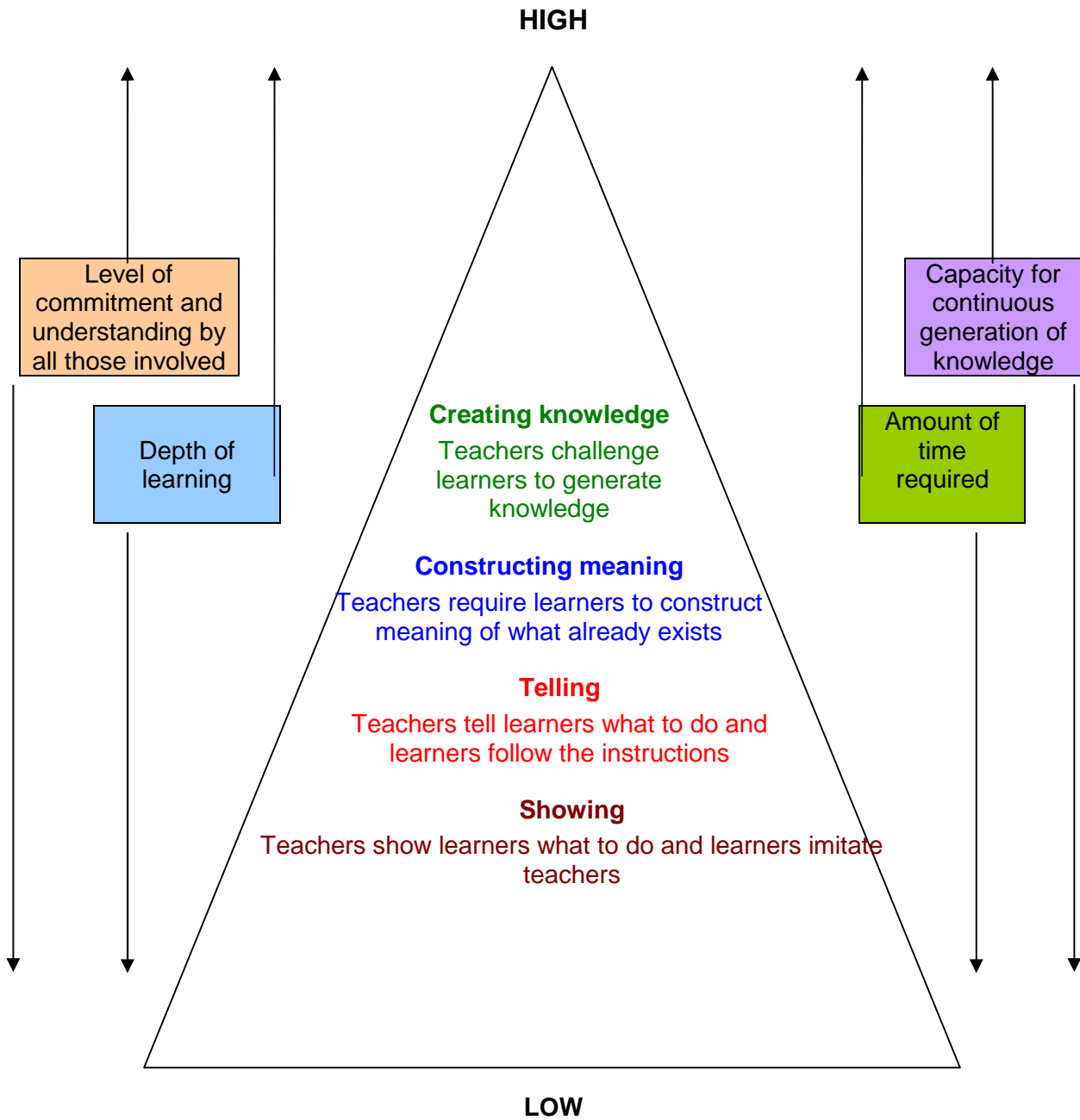
and transformation, have their origin in the work of Dewey (1944), Piaget, (1958) and Vygotsky (1978). Joyce, Weil and Showers (1992), Miller (1996) and others substantiated them subsequently. Some contemporary authors like Arons (1997), Freiburg and Driscoll (2000), Miller, (2003), and Darling-Hammond and Bransford (2005) believe that another model should be added beyond the transformation model. However, it is in particular the work of Engeström (2004) who included qualitative transformation as a higher level of learning quality beyond that of the existing models. Since this addition was so transcendental in its nature, Slabbert et al., (2009) reconceptualised the models as paradigms. These researchers labelled the latter one the transcendental paradigm because it transcends the limitations and deceit of the compliance culture going beyond the prescribed curriculum, the classroom, the school, learning to know, the self and the limited ways of knowing, and immerses the learner directly into real-life experiences. The dominant characteristics of each paradigm are depicted in table 3.2 and it is obvious why the transcendental paradigm constitutes the highest possible level of learning quality. The ethical competence of moral authority and excellence is inextricably linked with authentic quality. I agree with Groundwater-Smith and Mockler (2009) when they assert that

... quality is to be regained as a genuine virtue, then genuinely meeting accountability and professional responsibility standards is central ... In the end, quality will be determined by the extent to which professional responsibility is enacted ...reclaiming of 'quality' is a key element and tool of teacher professional knowledge ..." (p.11).

It is within the context of the preceding exposure of a contemporary educational discourse that the subsequent sections of this chapter should be interpreted. The purpose of the following sections is not to address each aspect of the contemporary discourse already discussed. Instead, the purpose is to address only those aspects that have a direct bearing on the current research question. It therefore becomes important to establish what an appropriate teacher education and teacher educator professional development epistemology should entail. Figure 3.1 depicts what the construction of learning quality in education entails in general.



**Fig 3.1 A construction of what learning quality in education entails in general**  
 (Adapted from Brunner, 1996:11)



**TABLE 3.1 LEARNING QUALITY**

		<b>BLOOM'S TAXONOMY (1980)</b>	<b>BIGGS'S SOLO TAXONOMY (1991)</b>	<b>BRUNER'S LEVELS (1996)</b>	<b>CLAXTON DE CORTE POWERFUL LEARNING ENVIRONMENTS (2003)</b>	<b>MILLER'S HOLISTIC EDUCATION (2003)</b>	<b>ENGESTROM'S TYPES OF LEARNING (2004)</b>			
<b>High</b>								<b>High</b>		
<b>L E A R N I N G  Q U A L I T Y</b>	<b>C O M P L E X I T Y</b>	Evaluation	Extended abstract	Creating knowledge	Real life in its uncompromising, holistic complexity Authentic context Personal meaning	<b>Transcendence</b> Creating knowledge Real life	<b>Radical Exploration</b> Creating knowledge Qualitative transformation Real life	<b>T I M E</b>	<b>H O L I S T I C</b>	
		Synthesis	Relational	Constructing meaning	Project Clearly defined More than one focus Gather information More than one answer	<b>Transformation</b> Participatory exploration Projects	<b>Incremental Exploration</b> Constructing meaning Project based learning Problem-based learning			
		Analysis	Multistructural	Telling	Application Clearly defined More than one focus All information given One answer	<b>Transaction</b> Participatory understanding Questioning	<b>Adjustable exploitation</b> Internalisation of knowledge Application			
		Application	Unistructural	Showing	Clearly defined One focus All information given One answer	<b>Transmission</b> Imparting Knowledge Lecturing	<b>Transferable exploitation</b> Transmission of knowledge Traditional school learning			
		Comprehension								
		Knowledge	Prestructural							
<b>Low</b>									<b>Low</b>	

**Table 3.2 Four Education Paradigms**

<b>EDUCATION PARADIGM</b> <b>EDUCATION COMPONENT</b>	<b>Transmission</b>	<b>Transaction</b>	<b>Transformation</b>	<b>Transcendental</b>
<b>Aim</b>	To impart knowledge	To understand knowledge	To apply knowledge	To maximise human potential
<i>Foundation Basis</i>	Content	Content	Content	Process (for content)
<b>Education mode</b>	Direct teaching	Interactive teaching	Project education	Facilitating learning
<b>Focus</b>	<b>Learning to know (facts)</b>	Learning to “understandnd” (facts)	Learning to apply (facts)	Learning to be (authentically and holistically human)
<b>Educator action</b>	Tell, illustrate, demonstrate, explain	Questioning, discussing	Give assignments, projects, guidance, help	Confront the learners with a real life challenge they have to resolve themselves
<b>Learner action required</b>	Absorb, memorise, drill, practice	Answering questions, discussing	Exploration, discover, experimentation,	Creatively constructing new meaning
<b>Learning mode</b>	Receptive	Interactive	Self-active	Self-directive and collaborative
<b>Learner autonomy</b>	None	Some	Much	Total
<b>Level of learning</b>	Shallow	Insight	Deep	Transcendental
<b>Learning outcome</b>	Cognitive	Social	Multiple	Holistic
<b>Outcome</b>	Core concept reproduction	Core concept understanding	Enriched curriculum	Authentic: Living real life wisely
<b>Learning quality</b>	Low	Medium	High	Maximum

(Adapted from Dewey, 1944; Vygotsky, 1978; Joyce, Weil and Showers, 1992; Miller, 2003; Engestrom, 2004; Darling-Hammond and Bransford, 2005)

### **3.3 A Contemporary Teacher Education and Teacher Educator Professional Development Epistemology**

The preceding section puts into perspective the main features of a contemporary teacher education and teacher educator discourse. The main thrust of a new contemporary educational discourse is that of a contemporary educational epistemology and subsequently a contemporary teacher education and teacher educator professional development epistemology.

I do not in this section intend to engage in an elaborate explication of knowledge theories, rather I focus on two theories underpinning knowledge. These theories have an exceptional consequence, especially regarding a longstanding dichotomy of the theory-practice gap in teacher education. The theories originate from the perceptions of knowledge espoused by ancient philosophers, namely Aristotle and Plato.

Some researchers have studied knowledge broadly to the extent of categorising it into *episteme* and *phronesis*, often with reference to the work of Aristotle and Plato (Korthagen, Kessels and Koster, 2001). Korthagen et al. (2001), for example, elaborate on these concepts by presenting a scenario illustrating practices followed and consequences of such practices in teacher education, and in so doing provide an analysis of the difference between *episteme* and *phronesis*.

**TABLE 3.3: TYPES OF KNOWLEDGE**

<b>KNOWLEDGE AS EPISTEME</b>	<b>KNOWLEDGE AS PHRONESIS</b>
Expert, scientific knowledge (theory) needs scientific understanding	Individual practical knowledge needs practical, creative, spiritual wisdom
Knowledge of principles	Knowledge of concrete particulars
Locus of certitude: Principles	Locus of certitude: Particulars
Knowledge is conceptual	Knowledge is perceptual
Knowledge is rigid	Knowledge is flexible
The concept dictates the practice	Uses the practice to construct a guiding rule/principle/procedure/method
Knowledge learned (memorised) and “applied”	Knowledge acquired through enough, appropriate and authentic <i>experiences</i> and enriched, adapted or changed by reflection and existing research (critical assessment: perceiving, assessing, judging, choosing actions, execute them, be confronted with its consequences and learn from them)
Provides concepts	Provides authentic, holistic insight (wisdom principles)
Teach the student concepts – avoid will, emotions, etc. – they disturb	Immerse the student in experience – celebrate will, emotions, transcendence, etc. – they provide insight

(Korthagen et al., 2001, p.15)

In the context of teacher education, especially as regards episteme, Korthagen et al. (2001) argue that teacher educators tend to be expected to solve the problems of the students, have knowledge at their disposal and therefore should be in a position to use such knowledge in a manner that students will be helped by it. The authors argue that such expectations present problems for teacher educators themselves. Therefore, their understanding of phronesis is that it is a different type of knowledge; it is not so much concerned with existing or concrete scientific theories which teacher educators tend to present to student teachers as conceptual. It is therefore unlike episteme perceptual. These researchers conclude that in the context of teacher education:

... there is nothing or little to transmit, only a greater deal to explore. And the task of the teacher educator is to help student teachers explore and refine their perceptions. This asks for a well-organized arrangement in which student teachers get the opportunity to reflect systematically on the details of their practical experiences, under the guidance of the teacher educator both in individual supervision and in group seminars” (pp.29-30).

Discussions on these theories which underpin the conceptualisation of knowledge in its broadest terms help to situate professional knowledge and other forms of knowledge as they pertain to teacher education. Most importantly, as can be deduced from the information presented in Table 3.3 (above), there is a clear difference between theory and practice.

This distinction between theory and practice has also been an inconvenient problem in teacher education throughout its existence in that the theory does not result in practice as it is expected to do:

We saw that the theory-practice gap is a result of the view that the traditional goal of teacher education is to teach expert knowledge (resulting from psychological, sociological and educational research) to student teachers, who can then use this expertise in their practice ... This view leads teacher educators to make a-priori choices about the theory that should be transmitted to student teachers. Research has shown that this approach has a very limited effect on practice” (Korthagen, 2000, p.255).

The reason for the above is the implicit assumption that the conceptual scientific discipline (*episteme*) is the real thing – the teaching itself. In fact, such abstract knowledge is a very poor device to provide any value to acquire a professional practice such as teaching. Having general, theoretical, technical, rationality disciplined knowledge at their disposal is not what they need. They need something else, if the ever-increasing and devastating theory practice gap is to disappear. “This something else is knowledge of a different kind, not abstract and theoretical, but it’s very opposite ...” (Korthagen, 2000, p.225). In actual fact, even if the teacher education through expert discipline knowledge was excellent or completely absent, what teachers actually do in practice, is quite a surprise:

What teachers use, in practice, is *phronesis*: situation-specific principles, context-dependent, that help them to rapidly arrive at decisions to solve practical problems ... What is important is that it helps the teacher, within the practical situation, to quickly perceive what is relevant in the situation and to base his or her actions on that perception (Korthagen, 2000, p.255).

It would therefore be inappropriate to think of the theoretical dimensions of professional knowledge as theory (*episteme*) to be applied to practice (*phronesis*). Such fragmentation is also the major contributor to the theory/practice dichotomy in teacher education and the teacher educator providing the education.

The construction of the professional praxis knowledge is accomplished through concrete experiences of that practice itself. However, to ensure that what has been experienced in practice becomes knowledge requires a crucial intermediate intervention. This intermediate intervention is a conscious reflective practice (Schön, 1983) because reflection is the instrument through which the concrete experiences are translated into dynamic, meaningful knowledge (Korthagen, 2001). Such a constructed theory of concrete experiences represents practical wisdom (*phronesis*: consisting of principles of situation-specific, context-dependent contexts) is called a practice theory (Furlong, 2000). Korthagen, (2000) indicates that in order to develop good teachers there is need for another pedagogy. Such pedagogy should start from a different view of what is important for student teachers especially if the interest is for helping them to become people of practical wisdom. Immersion in concrete practical experience (*phronesis*) is the foundation of the contemporary pedagogy. The curriculum is therefore an own construction of a practice theory; a theory of the experienced practice.

However, this constructed practice theory is continually informed and enriched by each subsequent education practice of the student teacher as such (through reflection and/or action research on his/her own practice). It is also informed and enriched by practices of other practitioners and experts as well as the exploration of existing education research (*episteme*: disciplinary theories) that may contribute to the improvement of the professional practice of education. The relationship between *episteme* and *phronesis* is therefore not the one **or** the other, neither the one **and** the other. Crucially *phronesis* is primary and *episteme* becomes a source for exploration to improve the professional practice that has already been constructed. The abstract disciplinary knowledge then becomes meaningful within the context or framework of education in practice, contributing to a repertoire of concrete, principled, practical wisdom (*phronesis*) of and for education in practice – where it manifests.

### **3.3.1 Addressing the Teacher Educators' Professional Needs through Self-Study Research**

In this section of Chapter 3, I align the literature reviewed to arguments that professionals in the education sector can benefit from engaging in research and learning from the experience.

As alluded to in Chapter 1, at the regional and international levels, teacher educators have responded to questions about the extent to which they can be classified as professionals by engaging in numerous activities, including research of a self-study nature, collaborating with either colleagues or student teachers in engaging in such research and presenting research based papers in conferences (Clarke, 3001).

It is important in discussing teacher educators' professional needs to refer to some of the work undertaken by some researchers in this area. I recognise the work of Groundwater-Smith and Mockler (2009), particularly as this work relates to research to be undertaken by teachers and teacher educators as professionals in their own right. They encourage teachers and teacher educators as practitioners to form "Professional Learning Communities" through which learning would be collective, collegial and collaborative. Among the distinct features of such a community would be engaging in reflective professional inquiry. I choose "reflective professional inquiry" out of five features of Professional Learning Communities for its relevance to this study.

Presumably, formation of such a community requires the practitioners themselves to be proactive and address the challenges that might emerge as they implement their professional activities. Groundwater-Smith and Mockler (2009) point to possible challenges and call for "action-for the teaching profession itself as well as those who serve it, such as teacher educators to pose a challenge to the compliance agenda in education in all its manifestations. Such a challenge is not likely to be easy, [though] ... "(p.139).

Groundwater-Smith and Mockler (2009) argue for inquiry-based professional learning for teachers. They point out that embracing the idea of inquiry-based professional learning would challenge teachers and teacher educators to develop some level of courage. They propose 8 attributes of courage. For example, teachers should have the courage to be true professionals in their practice, to take a transformative and liberatory stance and to propose the challenging solution, just to mention a few. They argue that courage has



always been part of practising teachers but that it is even more relevant to have courage in the context in which they are expected to succumb to demands posted by those who, for example, have the power to develop and impose standards.

There are other researchers who argue that teachers and teacher educators should develop the practice of researching. Lingard and Renshow (2010) write about teaching as research-informing professions; research undertaken by teachers should not only be classified as teacher inquiry or action-research but should in their view be a “researchly disposition” which should be instilled in teacher education institutions as educational research in its broadest sense. In this regard teachers and teacher educators would be empowered to engage in “productive pedagogies research” for its significance to practising teachers or teacher educators.

Another form of research that is commonly practised by teacher educators is known as “self-study”. Self-study is valued by teacher educators for its benefits. The benefits include empowering practitioners to examine their learning about practice, exploring scholarship through reflecting on their teaching, maintaining focus on their students’ learning and collaborating with colleagues or teachers in schools. Most significantly, as argued by Loughran (2010), the interplay between practice and scholarship could be appealing to educators as their work becomes more holistic as opposed to being placed in sections such as being in a teaching department and not in a research one.

There seems to be a close relationship between self-study and action-research. They both embrace reflection and reflective practice and are therefore aimed at empowering the practitioner. These concepts have been in the education sector for many years and are promoted by researchers such as Schön (1983, 1987). Kitchen and Stevens (2010), teacher educators at the University of Toronto, used self-study as an approach in an action research project in which they worked with their student teachers. Lessons learned from the research include the fact that Kitchen who had utilised reflection on past experience and present practice, as well as critical analysis and additional field experience as the tool for professional growth of student teachers, had plans to, as a result of lessons learned from the study, add inquiry through action research in the pre-service teacher education programme. Kitchen and Stevens (2010) conclude that

self-study was vital to our growth because it heightened our level of reflection during the action research process. By consciously examining our teaching

practice through action research and self-study, we were able to make adjustments to this assignment and the curriculum as a whole. By reflectively engaging in interdisciplinary and collaborative teaching we enhanced our skills as co-constructors and renewed our commitment to work with other teacher educators. Self-study was a very important part of our process. By reflecting on both this project and our teacher education practice generally, we developed deeper understanding of our research findings, identified possibilities for action research in teacher education, and examined closely our beliefs and practices as teacher educators (p.4).

In Kitchen and Stevens (2010) we learn about cooperation or partnering as colleagues with own students and in the process generating new knowledge and developing professionally. This idea is supported by researchers such as Groundwater-Smith and Mockler (2010) who report on partnerships between classroom practitioners and academics. It is a study whose outcomes, regardless of some challenges experienced in the process, proved to benefit all participants. Groundwater-Smith and Mockler (2010) conclude that this was a professional learning journey that they valued for its “capacity to open classroom doors, draw teachers and academics into new ways of working together and foster critical professional discourse [which is] surely an essential part of true professional learning and collaboration (p.167).

### ***3.3.2 Relationship between Research Undertaken and Learning***

The major question that underpins this study is with regard to where teacher educators draw their professional knowledge from. The literature presented in this section of the literature review chapter focuses on quality assurance and management issues, challenges facing teachers and teacher educators in the context in which teaching takes place. It further focuses on engaging in research as a possible strategy for teachers and teacher educators to learn from their experience. With the question that underpins this study in mind I now venture on literature on learning and its various facets for its relevance to the major question. It is critical to begin with metacognition and metalearning, given their importance in this study.

Flavell is one of the researchers whose educational psychology work has focused on, among other areas, metacognition. His 1971, 1976, 1979 and 1987 work is reported to have focused on, among others, educational psychology areas: metacognition and cognitive monitoring. In his work he is said to make reference to metacognitive knowledge and metacognitive experiences. In the description it is indicated that metacognitive experience can also be a ‘stream of consciousness’ process in which other information,

memories or earlier experiences may be recalled as resources in the process of solving a current-moment cognitive problem. The description goes further to indicate that metacognitive experience also encompasses the affective response to tasks. In the final analysis, success or failure, frustration or satisfaction, and many other responses affect the moment-to-moment unfolding of a task for an individual. The unfolding of the task may in the end help determine an individual's interest or willingness to pursue similar tasks in the future.

The Institute of Education, London (2001) further provides a description of metalearning and metacognition and shows the difference between these two concepts. The Institute asserts that metacognition refers to awareness of thinking processes and 'executive control' of such processes whereas metalearning refers to making sense of one's experience of learning. The Institute indicates that metalearning "covers a much wider range of issues than metacognition, including goals, feelings, social relations and context of learning (p1). Livingston (1997) takes the point further. He elaborates on metacognition and concludes that knowledge of a person variable refers to general knowledge about how human beings learn and process information. Knowledge of a person variable also includes individual knowledge of one's own learning processes.

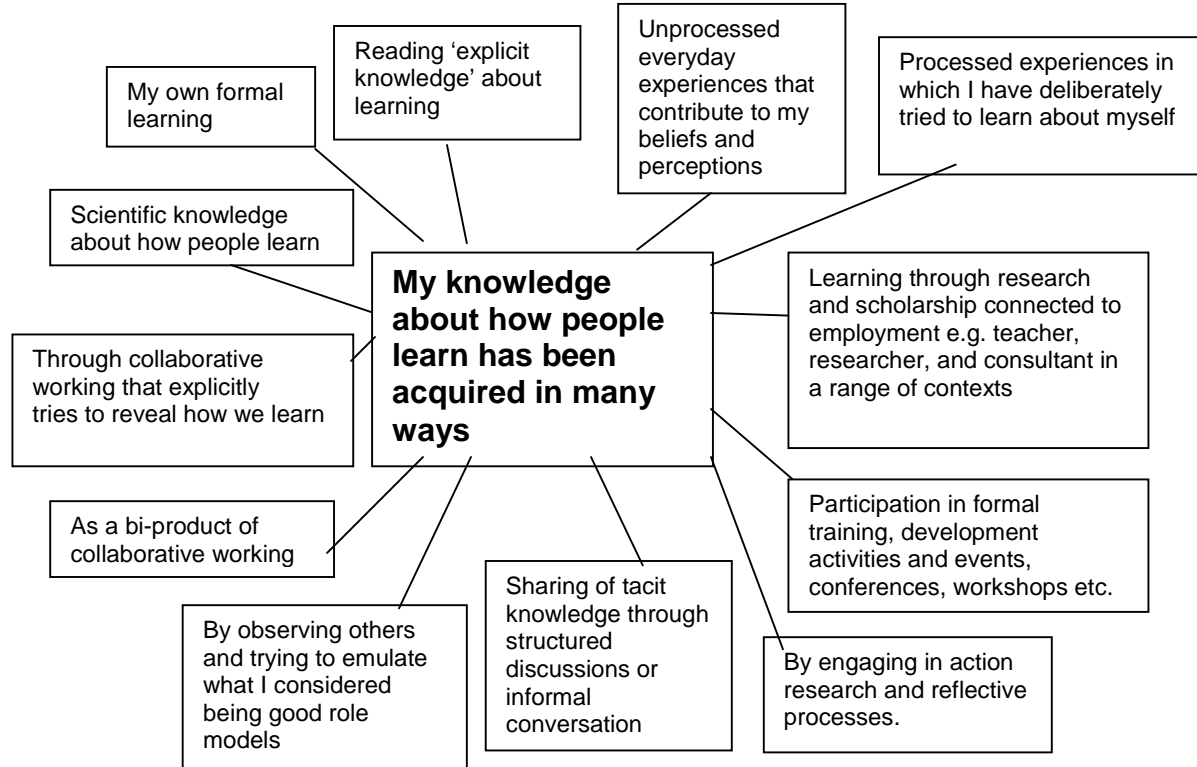
Ridley, Schutz, Glanz and Weinstein (1992) have summed up metacognitive skills. They include taking conscious control of learning, planning and selecting strategies, monitoring the progress of learning, correcting errors, analysing the effectiveness of learning strategies, and changing learning behaviours and strategies when necessary.

Besides researching learning as a construct, other researchers have ventured into researching metalearning and metacognition. Jackson (2003) explored metalearning as a concept. In preparation for a paper he was going to present at a symposium, Jackson engaged in research that would help make his paper research-based. His research involved symposium participants. The study was guided by a question: "**Is metalearning a valid and useful concept?**" [Jackson's emphasis]. He acknowledges that he borrowed the description provided in 1985 by John Biggs. The description indicates that within the concept are ideas such as that "people need to have knowledge of how they learn; have the motivation to be proactive in managing themselves in this way and have the capacity to be able to regulate their learning" (p.3). Jackson (2003) went further to associate metalearning with the concept of managing own learning and concluded that this concept is a complex mixture of "knowledge products – knowledge of learning / own

learning and how self learns, attitudes such as being prepared to do whatever one wants to do, capacities and skills involving thinking and acting on thinking and processes for doing whatever it is one wants to do. He presents what he thinks he has learned about how other people and how he has learned in a figure.

Jackson (2003) presents how people learn as individuals in the figure below. This figure, he argues, is informed by the research he did in an institution of higher learning. The research involved 15 medical general practitioners who were at different stages of their career.

Figure 3.2 How I think I have learned about how other people and I learn



Jackson (2003, p.6)

Jackson (2003) concludes his understanding of how people learn by making reference to a study that was carried out in 1999 by the United States of America National Council. The study identified three principles for effective learning and Jackson adopts these. He then argues that if metalearning means anything then it must relate to these fundamental principles:

- Principle 1: Students come to the classroom with preconceptions about how the world works. If their initial understanding is not engaged they may fail to grasp the new concepts and information.
- Principle 2: To develop competence in an area of inquiry students must
  - (a) have a deep foundation of factual knowledge;
  - (b) understand facts and ideas in the context of a conceptual framework;
  - (c) organise knowledge in ways that facilitate retrieval and application.
- Principle 3: A metacognitive approach to instruction (*presumably self-instruction also*) can help students learn to take control of their own learning by defining learning goals and monitoring progress in achieving them.

There are similarities in the analysis of the concept as presented by Jackson, Slabbert et al. and the Institute of Education London (2001). While Jackson (2003) concludes that metalearning is the sort of knowledge that enables individuals to be effective learners, Slabbert et al. (2009) conclude that it is the process where learners are in complete control of their own learning. Solely the purpose for a learner would be to ensure that the highest possible quality of learning is attained. Slabbert et al. (2009) take the point on metalearning further by pointing out that metalearning is the instrument through which “flexible learning, situated learning, contextual learning and contingent learning are acquired and practised as integrated constructed competence” (p.110).

The other aspect of learning discussed in the literature is metacognition. Jackson (2003), while making reference to various researches and people such as Flavell (1979) and Cowan (2003), comes up with his conceptualisation of the word *metacognition*. In his view metacognition entails “thinking, to good purpose, about how the processes of cognition work, and in particular, about how they can work for us ...” (p.12).

Reference to issues of learning in its broad sense is made to Mezirow (1991), Slabbert et al. (2009), and the Institute of Education London (2001) where the concept *learning* is described. Mezirow (1991) describes learning in the context of adult learning and indicates that

Learning may be defined as the process of making a new or revised interpretation of the meaning of an experience, which guides subsequent understanding, appreciation, and action. What we perceive and fail to perceive and what we think and fail to think are powerfully influenced by habits of expectation that constitute our frame of reference, that is, a set of assumptions that structure the way we interpret our experiences. It is not possible to understand the nature of adult learning or education without taking into account the cardinal role played by these habits in making meaning p.1.

The literature indicates that learning is a complex undertaking. Learners have to construct meaning themselves; in this regard they have to be active and creative (Slabbert et al., 2009). Additionally, learners tend to, especially in situations where they encounter an unfamiliar context, direct the way they collect additional information, compare incidents and consequently relate emergent patterns metaphorically to their meaning perspective. Mezirow (1991) further indicates that it is critical to validate results, especially in contexts in which learning involves the ability to control and manipulate an environment or other people.

The Institute of Education, London presents a report in the National School Improvement Bulletin focusing on learning about learning. The report whose purpose it is to review evidence which connects learning about learning with higher levels of performance is based on an analysis of about 100 research studies. It is acknowledged in the paper that the review is structured according to periods of schooling (preschool, primary school and secondary school) which may imply a developmental trend to learning about learning. However, the conclusion reached is that an “explicit focus on learning is an infrequent experience at any stage of education, and many learners show signs that they have little understanding of their own learning processes” (p.7). This gap displayed by learners could justify the reason for this Institute to emphasise the value of reflection in which “expert learners” employ reflective thinking skills to evaluate the results of their learning efforts. Therefore learning about learning is a complex undertaking which requires learners to build on their learning skills through reflecting on the learning itself.

This literature review on learning and the various aspects of learning reveal that individuals have numerous ways of learning. In a nutshell as pointed out by Watkins (2001), while metacognition is a defining characteristic of our species, metalearning is the dynamic episteme.

### ***3.3.3 Research Questions and Implications for Learning as a Construct***

At the teacher education level, teacher educators’ practice is partly informed by the objectives articulated in teacher education programmes. Teacher education objectives are in turn informed by the broad aims of an education system as captured in national curricula. Therefore, in this context, teacher educators would be expected not only to engage in teaching that is cognizant of national educational aims but should do so in the most efficient ways, thereby ensuring that student teachers benefit from such endeavours. The implication is that teacher educators are heavily influenced by developments prevailing in education systems since they have to remain relevant to national educational goals.

Another implication is that the process of learning is not only targeting student teachers and their future students but also has to begin with teacher educators themselves. In ensuring that the teachers’ teaching results in the anticipated learning outcome, they have to challenge their learners in a manner that will ensure that the aim of education is

achieved. In this regard, what needs to be taught and how it is taught is crucial so that teacher educators act out or model what they themselves expect of their student teachers.

The conclusion drawn by Van de Groep et al., (2005) on professional development of teacher educators is helpful. These researchers indicate that the most stimulating condition for the professionalisation of teacher educators is for them to find an occasion to reflect. This means that in practice they are learners in their own right and as such have to be asking questions such as what it is that they want to learn and what it is that they find important in their work. Such questions could contribute to helping them find passion and motivation for their work.

Therefore, the need to reform current practice in educating student teachers as articulated by James (2009) is long overdue. James refers to the frustration experienced by student teachers in practice. The frustrations experienced are brought about by global teacher education situations in which the traditional aim is to have student teachers learn knowledge constructed by experts and use the expertise in their own teaching (Slabbert, 2003). In her further arguments on the need to change the pedagogy of teacher education, James also makes reference to Schön's technical rationality. James's (2009) argument is based on a recently undertaken research for the fulfilment of her PhD programme. She concludes that it is in embracing the technical-rationality approach that teacher educators make "a priori choice" about the theory that should be transmitted to student teachers. In the end they tend to use transmissive methods of delivering the content.

The argument raised by James (2009) points to the current practice as being biased towards teacher educators modelling *episteme*; yet currently, as demonstrated by her study, the trend should be to model *phronesis*. Further argument on Schön's (1987) technical rationality approach will be elaborated on below, as it is commonly used in most teacher education contexts, albeit with limited impact on practice.

The other specific question that this study is addressing is on the construction of professional knowledge. As will be detailed below, constructivism has much relevance to learning. The argument raised in the literature is that knowledge is constructed internally and through a process of interaction with the social world (Berman, 1988). Underpinning the arguments raised about constructivism is that learning is both fundamentally and radically constructive in nature. Heyligen (1997), in elaborating on knowledge as



fundamentally constructive in nature, is of the view that it is constructed in situations where students attempt to make sense of their world. Von Glaserfeld (2001) expounds on learning as radically constructivist in nature, with the emphasis on the ability of individuals to construct knowledge.

These elaborations on constructivism help to justify the fact that providing student teachers with an opportunity to construct knowledge is a way of ensuring that they too will practise what they would have learned from their teacher education programmes. A graduate's ability to let his/or her students develop skills that will enable them to uphold constructivist ideals would be providing them an opportunity to become independent.

### ***3.3.4 Implications of Research and Research Questions on Teacher Educators***

I acknowledge here that teacher educators constitute an important section of any education system. In practice they play a fundamental role of educating teachers for various levels of education systems. Therefore, while this research revolves around teacher educators, and more specifically on their sources of professional knowledge, attainment of that knowledge and relevant qualifications, in the end, is targeted at the student at the school level. The school level student is expected to achieve a particular educational aim (Slabbert et al., 2009). The challenge therefore remains for teacher educators to make that connection as they too learn in practice on best approaches to educating student teachers.

Consequently, those school level students will benefit from good practice demonstrated by graduates of teacher education programmes. Therefore teacher educators, given the very mandate of educating teachers, should be concerned about the ultimate goal of educating student teachers who enrol in teacher education programmes. In practice, therefore, learning has to take precedence as a contextualising factor, given that currently people, including professionals in education, talk about "good teaching when the teacher has brought the students to good learning" (Vermunt, 2003). It is important to reiterate here that teacher educators therefore have to educate student teachers in a manner that will help them engage in a kind of teaching which should aim at achieving an education aim, and they should do so in the most efficient manner if students are going to benefit from such teaching endeavours.

The challenge for teacher educators and education systems in general is educating student teachers in a manner that ensures that the required learning takes place. This centres on the ability of teacher educators to deliver teaching in a manner that ensures that the student teachers' teaching activities will result in the intended aim of education being realised. The challenge therefore is on the teacher educators themselves, as they too would have to rethink the strategies they have been using to embrace new developments. For example, issues of co-operative learning (Slabbert et al., 2009) require a rethinking of the common practice of grouping students to undertake a particular task. The teacher educator who focuses on rethinking the manner in which students are helped to become radical in their ways of thinking and teaching is cognizant of the role of concepts such as metalearning and metacognition in teacher education.

Teacher educators who embrace such concepts strive for empowering student teachers with the ideals of constructivism that are built on an understanding that knowledge is not passively received but actively constructed by the individuals through interactions with the environment (Slabbert et al., 2009). The context of metalearning is such that students become effective, self-directed, independent lifelong learners. In this regard teacher educators would be required to encourage their student teachers to uphold the ideals of encouraging their own students to create interactive environments in which they would be required to construct meaning. It is in a real life context in which students can be challenged so that they can resolve real problems, which more often than not do not necessarily need the support of teachers. Students require skills for resolving challenges and they would be compelled to do so by prevailing circumstances (Slabbert et al., 2009).

### ***3.3.5 Implications of Professionalism for Teacher Educators***

Having discussed professionalism in Chapter 1, I revisit the concept here for its relevance to this chapter. I wrote about the need for teacher educators to, as is the case with all other professionals in other disciplines, be certificated (Clarke, 2001). In this context I refer to professionalism as it relates to choices that teacher educators have to make in executing the teaching of student teachers. The emphasis here is that teacher educators should, as they make teaching decisions, be cognizant of the fact that "professional knowledge is derived from practice" (Slabbert et al., 2009, p.132). In this regard a professional would act in ways that are illustrative of his or her professional knowledge, skills and values that are uniquely those of teacher education. In the latter

researchers' view, teacher educators would therefore be upholding values that demonstrate their integrity in such a manner that they are distinguishable from other professionals.

The challenge for teacher educators as professionals therefore is to harness phronesis through exposing student teachers to and challenging them through what Korthagen, (2001) refers to as new experiences and continuously ensuring that they understand the principles that cause their practice to be successful (Slabbert, et al., 2009). Therefore, it is only in situations where student teachers are exposed to opportunities that require them to think beyond education taught in teacher education institutions that they can construct new conceptions and internalize fundamental changes in their own learning, and so educate their own students. However, as they adopt new ideas, teacher educators should bear in mind fundamentals of human virtues which, when examined alongside professional integrity, call for upholding moral values and norms. Palmer (1998) summaries fundamentals of human virtues and professional integrity by indicating that knowing one's students and own subject:

depends heavily on self-knowledge. When I do not know myself, I cannot know who my students are, I will see them through a glass darkly, in the shadows of my unexamined life and when I cannot see them clearly, I cannot teach them well. When I do not know myself, I cannot know my subject not at the deepest levels of embodied, personal meaning. I will know it only abstractly, from a distance ... as far removed from the world as I am from personal truth (p.2).

In the final analysis teacher educators, by the nature of their work, have demands to address in their day-to-day activities. In practice they are not only concerned about their own learning but they at the same time have to think beyond a teacher education context. This is a context in which there are learners in the school system; most of them will be taught by graduates of teacher education programmes.

### **3.4 Researching Professional Knowledge**

Professionals are known to have a unique knowledge base. The “Professional Character” presented in the box below stipulates professional competencies that could serve as a guiding principle to professionals. It helps to illustrate what professional competences entail.

### CHARACTERISTICS OF A PROFESSIONAL

- a. Professionals possess an expert body of knowledge, skills, attitudes and values in their field of practice
- b. Professionals belong to a professional body and submit to a professional code of conduct.
- c. Professionals exercise a professional practice.
- d. Professionals design their unique professional practices from the dynamic interplay between their expert body of knowledge, skills, attitudes and values and their practical experience of their profession.
- e. Professionals are able to monitor and critically assess all their actions and their consequences against a solid foundation in a reflective mode to:
  - precisely pinpoint the very instances of their success, failure or uncertainty;
  - accurately diagnose its cause;
  - correctly identify – but even much more importantly – creatively generate alternative possibilities;
  - confidently make the best possible choice for follow-up action; and
  - boldly engage in the improvement of the original attempt;
- f. This means that professionals are able to make the most appropriate, responsible, accountable and instantaneous decisions at any required moment to pursue the best possible outcome despite what has originally been designed or prepared.
- g. Professionals are always working at the cutting edge of their professions: ensuring that they access the most recent knowledge and skills to make the best possible choices for incorporation into their practices in a responsible way to ensure the highest possible quality of professional practice.
- h. Professions are problem-solvers. Whenever a professional experiences an obstacle of a kind or finds an opportunity to improve the quality of the profession, he/she engages in the process of problem-solving even if it requires creativity constructing new knowledge and designing new skills for the profession.
- i. Professionals are therefore continually improving their practice.
- j. Professionals are responsible in all respects. They do not need checking-up on executing their professional task exceptionally well, and they bear the consequences for the action they take and the choices they make.
- k. Professionals are professionals because no one else but the professional can do the job of that particular profession. If a professional therefore engages in activities that someone else outside the profession can do, then the professional does not do a professional's job.

Slabbert, De Kock and Hattingh, (2009, pp.129-130)

The search for literature on professional knowledge has revealed that extensive work in the form of research and review of published research that highlights the various kinds of knowledge has been researched and written about (Hofer & Pintrich, 1997, Paavola,

Lipponen & Hakkarainen, 2004, van den Beg, 2002, Schön, 1983, Shulman, 1988, Rando & Merges, 1991, Trip, 1993; Fenstermacher, 1994). In presenting various forms of knowledge, Fenstermacher's (1994) review of work undertaken on knowledge focuses on the knower and the known, and looks at the nature of knowledge on teaching. What makes his review relevant to the current study is the justification he provides for his review, which, unlike other teacher knowledge reviews, examines research on different research programmes that "either explicitly purport to be about teacher knowledge or that expand what is known about teaching" (p.3).

Fenstermacher (1994) then describes knowledge as ranging from formal teacher knowledge (TK/Formal) to practical knowledge (TK/Practical), and in doing so terms such as *personal practical*, *situated*, *local*, *rational* and *tacit* knowledge are presented. He describes knowledge in the context of the mental state and activities of teachers, pointing out that "knowledge is simply a generic name to describe a broad range of mental states of teachers that arise from their training, experience, and reflection and has little if any epistemological importance" (p.35). His review is broad and encompassing, and helps to illustrate that extensive research has been undertaken in this area.

However, research on knowledge in the area of teacher education seems to have focused on teachers and teacher educators in institutions in developed countries more than in institutions such as the one in which the current study was carried out. Fenstermacher's (1994) review is broad and it raises a series of critical questions that informed his approach to the review: What do teachers know as a result of their experience as teachers? What knowledge is essential for teaching, and who produces knowledge about teaching?

Embodied in the research that has focused on knowledge is the categorisation of knowledge as an idea, which suggests that there are different types of knowledge that have been researched. A large number of researchers, including Tom and Valli, (1990), Hiebert, Gallimore and Sigler (2002), Stuart, (2002), Eraut (1996), Eraut (1994), Schön, (1987) and Schön (1983) have studied and analysed, among other types of knowledge, professional knowledge. Eraut (1996) defines professional knowledge as "knowledge possessed by professionals which enables them to perform professional tasks, roles and duties with quality" (p1). Schön (1983) adds to this description by pointing out that a

profession has a systematic knowledge base, which means that it is specialised, firmly bound, scientific and standardised.

In the context of these studies it seems that professional knowledge distinguishes one profession from others, while also unifying those who are in the same profession. Stiggins (1999) concludes that professional knowledge must be public, which in his view means that it should be represented in a manner in which it can be communicated among colleagues; hence, the value attached to ensuring that professional knowledge is storable, sharable and that there are established mechanisms for verifying and/or improving it (Stiggins, 1999).

There are other research studies that have been undertaken on professional knowledge, some of which point to professional knowledge as often tacit. It is knowledge that broadly covers a myriad of activities, including: knowledge of: subject matter, classroom organisational and instructional techniques; the structuring of learning experiences and curriculum content; students' needs, abilities, and interests; the social framework of the school and its surrounding community; and their own strengths and shortcomings as teachers. The descriptions conclude with a note from Goodnough's (2001) acknowledgement that teachers' knowledge is dynamic, that it is held in active relation to practice and used to give shape to that practice. It is summed up as follows by Slabbert et al. (2009):

Professional knowledge is practical knowledge harnessed to an ethical ideal. Its outcome is creative wisdom. It is therefore qualitatively a different kind of dynamic knowledge. It is different from academic and technical knowledge because it is characterised by a professional ethos. A professional ethos is established through professional development of which the purpose is to improve the quality of the professional knowledge (p.41).

It would seem that comprehending teacher educators' work requires an insight into how they themselves interpret the complex nature of their work. Unless tacit knowledge is made explicit by the professionals themselves, professional knowledge in the context of teacher educators could remain implicit. This might explain the new wave of research into self-study, mainly undertaken by teacher educators. Teacher educators, as will be discussed below, seem to, in undertaking this type of research, explicitly share their otherwise tacit knowledge.

The major question that this study is addressing is with regard to sources of professional knowledge among teacher educators. The literature review has revealed that there are

numerous sources from which teacher educators draw their professional knowledge. The literature further indicates that these range from those that can be solicited from the academic institutions and those that are acquired from practice. The work of Jackson (2003) referred to earlier in this chapter illustrates this point. The sections that follow elaborate on the various sources of knowledge as they relate to teacher educators. Therefore the literature in this part of the chapter helps to contextualise the research questions in the literature.

### ***3.4.1 Propositional/Received Knowledge***

Teacher educators acquire knowledge that allows them to engage in professional activities. The need to prepare teacher educators academically for teaching in teacher education programmes is real. Teacher educators operate in a double-layered context in which they prepare adult learners for whom teaching is governed by andragogical principles. These are the principles by which teaching and learning methods are considered appropriate for adults and not children. In such a context teacher educators have to bear in mind that the same adults that they are teaching are being prepared to teach children (Ntoi & Lefoka, 2003; Mazirow, 1990).

Studies focusing on the offering of formal or propositional knowledge for teacher educators have been undertaken by Harris (2003) and Kosnik (2005) who looked into programmes and research on propositional knowledge. Harris's (2003) study involved 11 universities offering doctoral programmes in education and established that there are universities that offer teacher education programmes. However, Harris' study, which was undertaken in the USA, may not necessarily be generalised to other parts of the world. Although it is not clear whether there are teacher educator programmes offerings in other institutions outside the USA there is no doubt that such programmes are needed by teacher educators. This is particularly so in other parts of the world, especially in the context in which this study was carried out.

Kosnik (2005) claimed that engaging in research referred to above had been facilitated by being a member of a Special Interest Group of the American Educational Research Association (AERA). A realisation by Kosnik (2005), as a teacher educator, was that failure to move in her professional life implied being left behind as a teacher educator. Kosnik (2005) engaged in the production of various publications, which in her view helped in developing a knowledge base for teachers and teacher educators. She points

out that conversation with other professionals on the use of research to define a good teacher education programme, clarifies effective practices and helps novice teachers. In Kosnik's (2005) view, learning from other professors entailed discussions with scholars such as Shulman, whose suggestions concluded that the use of cases in teaching as is commonly practised in disciplines such as law, is also relevant in the teaching of teachers. Therefore, propositional knowledge received in teacher education institutions can benefit from research undertaken with the intention of improving programmes offered in such institutions.

In a study in which student teachers were involved in research, Kroll (2005) examined a possible outcome in a situation which involved student teachers in a two-year graduate programme. The study required student teachers to research the application of technical and theoretical knowledge as they systematically answered questions, collected data and engaged in controlled experimentation. In a case study Knoll (2005) examined students' experiences to learn within the specific context of the students' teaching seminar. The student teachers were to examine their learning within their student teaching placements individually. The study allowed her to use her own notes, plans and reflections about the process as a participant-observer. In a way she fostered self-study through a case study approach.

The study undertaken by Kroll (2005) illustrates that teacher educators and their student teachers can benefit from a study in which they are both involved. For her part, Kroll (2005) learned from the experience in that the study supported "the meta-cognitive processes associated with developing the inquiry skills needed for the study of one's own work as a teacher educator" (p.192). Kroll (2005) concludes by arguing that inquiring into one's own practice is essential since it contributes to becoming a life-long learner. The student teachers who participated in the study also benefited from this experience. They had been initiated into research that could help them develop techniques, knowledge and habits of mind that in turn could enable them to address the issues of practice that would inevitably arise as they teach (Kroll, 2005).

Concerns have been expressed (Lunenbergh & Willemsse, 2006) with regard to the lack of formal training of teacher educators to the extent of concluding that "a number of problems that teacher education experiences could arise from the fact that the whole issue of education of teacher educators has been rather neglected" (Buchberger, Campos, Kallos and Stephenson, 2002, p.56). However, the emergence of self-study



type of research addresses some of the identified problems. Teacher educators in some parts of the world have taken seriously the need to research their work, to the extent of involving their own students (Kroll, 2005). The fact that teacher educators in some teacher education institutions have found self-study to be a niche area is exemplified by studies such as those undertaken by Lunenberg and Willemse, (2006). These researchers engaged in three studies that focused on research as it relates to the professional development of teacher educators. Each of the three studies was followed by reflections on the process that was pursued.

However, while Lunenberg and Willemse (2006) established that teacher educators are aware of self-study as an effective means of connecting the academic task of conducting research to their own professional development, self-study has been found to be challenging for some teacher educators. According to Cochran-Smith (2003), teacher educators either do not have time to undertake research or lack skills for conducting it by themselves on their own practice. Hence Lunenberg and Willemse's study was intended to bridge the identified gap; their efforts may have helped those teacher educators who participated in their study. It may also have attracted some teacher educators in other parts of the world to engage in similar studies. It is difficult, though, to establish the extent to which the idea of undertaking research on own practice has spread throughout the world or the degree to which propositional knowledge generated has advanced the field of teacher education in general.

### ***3.4.2 Practical knowledge***

Descriptions of practical knowledge seem to be based on research undertaken in specific contexts, such as the field in which teachers are situated. The work undertaken by several researchers, including Clandinin (1992), Calderhead, (1988), Hiebert, Gallimore and Stigler (2002) and Fenstermacher (1994) has contributed to the conceptualisation of practical knowledge. Clandinin (1992) describes personal practical knowledge as being in the person's present mind and body and in the person's future plans and activities.

In Clandinin's (1992) view, practical knowledge reflects the individual's prior knowledge and acknowledges the contextual nature of the teacher's knowledge. It is considered to be a kind of knowledge carved out of and shaped by situations. It is constructed and reconstructed as professionals live out their stories and retell and relive them through

processes of reflection. Practical knowledge is therefore that knowledge that is readily accessible and applicable since it is mainly derived from teachers' own experiences (Calderhead, 1988).

Because "practitioner knowledge" is linked to practice it has been found to be useful to the practitioners themselves (Hiebert, Gallimore & Stigler, 2002). The "practitioner knowledge", according to Hiebert et al. (2002), is useful for practice since it tends to deal directly with specific problems. This is probably because practitioner knowledge deals with implicit theories better understood by professionals or practitioners themselves. This view is supported by Kane, Sandretto and Heath (2002) who, in discussing practitioner knowledge, refer to "theories-in-use", which exist predominantly as tacit knowledge or knowledge held but that cannot be easily articulated. Hence there is a tendency by some researchers to emphasise the existence and value attached to tacit knowledge. Schön (1983) argues that implicit knowledge relates to "knowing-in-action", which in his view refers to the sorts of "know-how" that is revealed in observable actions. He claims that this kind of knowing tends to be more in action and is revealed spontaneously; yet characteristically one is unable to make it verbally explicit.

#### 3.4.2.1 Values Attached to Practical Knowledge

There are values attached to practical knowledge, though literature suggests that, since it tends to remain implicit, it should be made explicit and so available to other researchers or practitioners. Shulman, (1987), Schön, (1983), Van den Berg (2002) and Eraut (1994) suggest that implicit knowledge can be made explicit by using cases. In making practical knowledge explicit, practitioners in the context of teacher education should borrow from other professions and use a case as a unit of analysis.

Schön (1983) illustrates the use of "cases" by referring readers of his work to two professions, namely medicine and law. He points out that a physician who, upon encountering many different cases of measles or a lawyer who may encounter many different cases of libel, tend to be informed by many variations within cases of their respective professions. In this regard small variations of cases would enable professionals to develop a repertoire of expectations, images and techniques, and to learn what to look for and how to respond to what they find. To this view Shulman (1988) adds that a 'case' is not just a well-written anecdote, but rather it extends opportunities

for reflection precisely because a practitioner could go beyond the limits of individual experiences and reflect on the experience of others.

Language appears to be one of the major contributors for ensuring that implicit knowledge becomes explicit. Munby and Russel (2001) found language to be a powerful tool in communicating one's world and how that world is constructed. It would seem that tied to the teachers' actions is the language they use that seems to clarify thoughts, especially as they apply their knowledge and to a large extent as they are interviewed about their actions.

The issue of language seems to imply that tacit or implicit knowledge needs to be made explicit if teacher education knowledge is to become public knowledge. Munby and Russel's (2001) work suggests that observing teacher educators in practice in undertaking research on professional knowledge may be critical; it is through their actions and the language they use that professional knowledge in this field could be communicated in public fora.

Revealing what practical knowledge entails through language and engaging in case studies supports the work of Clandinin and Connelly (1995). The works of these researchers stipulates that knowledge is acquired as professionals engage in using it over an extended time and through application to new situations. The authors indicate that teachers' knowledge "is that body of convictions and meanings, conscious or unconscious, that have arisen from experience ... and that are expressed in a person's practices" (p.7). Therefore, knowledge may be acquired through experience and through deliberate reflection about inquiry into experience (Cochran-Smith and Lytle, 1999; Kennedy, 2002; Zanting, Verloop, and Vermunt, 2003).

#### 3.4.2.2 Learning as a Consequence of Experience

Discussing learning as a consequence of experience, Stuart (1998) argues that professional learning is part of the process of human growth and development and that in the end everyone has to do his/her own learning. This view is supported by Eraut (1994), who posits that professionals continually learn on the job, because their work entails engagement in a succession of cases, problems or projects which they have to learn about and make sense of in their practice. However, Eraut (1994) concludes that there is little research evidence to indicate the overall level of work-based learning in any profession.

In the context of practical or experiential based knowledge, Cochran-Smith and Lytle (1999) refer to two conceptions of teacher learning, that is *knowledge-in-practise* and *knowledge-of-practise*. The concept *knowledge-in-practice* entails practical knowledge, including reflection on practice. The assumption here is that teachers learn when they demonstrate their expertise, especially in situations where they are capable of making intelligent judgements. Additionally, teachers demonstrate expertise when they are designers of rich learning interactions in a classroom context.

*Knowledge-of-practice* is knowledge that teachers need if they are to teach well. It is knowledge that is generated when they treat their own classrooms and schools as sites for intentional investigation. At the same time they treat the knowledge and theory produced by others as generative material for interrogation and interpretation. In Cochran-Smith and Lytle's (1999) view, "teachers learn when they generate local knowledge of practice by working within the context of inquiry communities to theorize and construct their work and to connect to larger social, cultural and political issues" (p.250). Cochran-Smith and Lytle's (1999) study is directly linked to the current study because it highlights the different conceptions for categorising sources of professional knowledge. Nonetheless, the findings of this review highlight that teachers' sources of professional knowledge are diverse.

While *knowledge-in-practice* and *knowledge-of-practice* convictions imply that practice could contribute to confidence based on what may accrue from practice, this does not downplay the fact that professionals can also benefit from other forms of professional development activities. Empirical research has shown that professional development initiatives that focus on certain aspects of education tend to help educators understand the content they teach and the ways in which students learn that content (Guskey, 2003). Professional development is therefore viewed as a cornerstone of systematic reform efforts designed to increase educators' capacity to teach (Disimore, Porter, Garet, Suk Yoon and Bierman 2002).

Smith (2003) shares his experiences as chair of a department of teacher education for secondary school teachers in Israel. He advances three possible reasons that justify the provision of professional development of teacher educators. To improve the profession, Smith suggests continuing professional development for teacher educators. Ensuring that they are constantly receiving education has consequences for the education of teachers and the education system as a whole. In practice, the quality of teacher

education programmes is dependent on well-grounded teacher educators. He provides as the second reason for continuing professional development the need to advance the profession. In this regard Smith (2003) proposes constant addition to the teacher educators' professional knowledge. He argues that they also need to work and look for other options for offering teacher education, a situation which requires them to find ways of accessing new knowledge and being prepared to try out new ideas in their own context. The third reason is with regard to promotion and tenure. The challenge here is to undertake research that will enhance the recognition of their own institutions' reputation and that of themselves as professionals.

Smith (2003) is of the view that opportunities for learning include attaining higher academic credentials, participating in continuing professional development programmes, using case studies and discussions on specific issues addressed in own institution. He advises that teacher educators should take advantage of feedback provided by supervisors of instruction and own students within own institutions. In this regard they would gain from feedback provided by mentors and voluntary support. Smith argues that there is value in teamwork where a group of teacher educators may share problems with the intention of finding solutions as a group of educators teaching the same or different course. Doyle (1990) and Paavola, and Lipponen and Hakkarainen (2004) agree with Smith's findings and indicate that learning to teach in the context of teacher education is about translating and transferring knowledge from one form to another, for example, from practical to propositional and procedural to perceptual knowledge.

These views may be related to some researchers' observations that the nature of teaching about teaching and/or teaching others how to teach, demands skills, expertise and knowledge that cannot be taken for granted. Therefore, besides learning in formal institutions, there are prospects for learning on the job (Korthagen, Loughran and Lunenbeg, 2005). These researchers make reference to research on mid-career and early-career professional learning in the business, engineering and healthcare sectors, in which a typology of trajectories for classifying what was being learned was developed. The typology of learning trajectories includes task performance, awareness and understanding, personal development, working with others, role performance, knowledge of the field, decision-making, problem-solving and judgement.

It is evident that teacher educators are under pressure not only to study their own practice but to explore how experience in studying their work might impact on their

academic learning. This is more so where opportunities for professional training for higher education teachers are scarce, as reported in a study by Donnelly (2006) conducted in the Republic of Ireland. Here integrating learning technologies with experiential learning in a postgraduate teacher education course involved academic staff. Donnelly's study benefited from using a self-study approach. Critical issues were raised in his study, with scholars developing as reflective practitioners by distinguishing their own work and offering their personal accounts for public criticism. He asserted that his professional practice was transformed to the extent that his role in tutoring using learning technology improved.

Although Donnelly's (2006) study was concerned with integrating learning technologies with experiential learning in a postgraduate teacher education course in a developed country, it has revealed experiences of a teacher educator researching his work and learning from that experience. The study points to the concern that teacher educators have regarding what characterises them as they deliver the content. The study further illustrates that the teacher educator who participated in the study came out of it with different views, and that, most importantly, he had transformed his own practice. In essence, Donnelly (2006) illustrates that learning becomes significant if one is conscious of the process in which one engages. This view is shared by Clarke and Mitchell (2007) who also engaged in a similar study.

### 3.4.2.3 Learning Facilitated by Practice in other Contexts

In the real world of practice, teacher education is not only embedded in teacher education institutions but it is played out in school systems, in places where student teachers practise with their educators supervising them. The tendency for teacher educators to engage in research that takes them to schools is therefore evident. The literature has revealed that some researchers have studied the extent to which schools in which student teachers do their teaching practice could serve as sources of professional knowledge for teacher educators. Alexander (2004), Clarke, Erickson, Collins and Phelan (2005), Zanting, Verloop and Vermunt (2003) researched work in schools in which student teachers practice are cases in point. Clarke (2007), a teacher educator today also reflects on his work as a mentor in a secondary school context.

Alexander (2004) decided to spend time teaching children instead of observing, and undertaking research on student teachers engaged in teaching young learners. There

were a number of reasons for doing so. Teaching children gave him an opportunity to test new ideas and methodologies and find answers to the questions he was keen to find answers to. The questions were, What do we know about learning styles, multiple intelligences, how to teach higher-order thinking skills or guided reading? These are concepts and ideas that teacher educators talk about in their teacher education classrooms. A further reason was a realisation that working directly with students in the schools provides an opportunity to forge connections between schools and colleges or faculties of education. His other reason was that working directly with students helps teacher educators gain credibility with one's pre-service teachers. In both instances he was developing his expertise as a teacher educator.

However, although the two studies by Alexander (2004) and Clarke et al. (2005) were undertaken in a school context and provided a learning environment for the university-based teacher educators, they differ. Alexander (2004) was keen to teach school children while Clarke et al. (2005) to a large extent collaborated as colleagues and with their own student teachers. Despite these differences, the two cases illustrate that schools are a relevant context to improve one's professional knowledge. Furthermore, the two case studies provided the teacher educators opportunities to reflect on the impact of their teacher education programmes on their own student teachers. This is an experience that Clarke et al. (2005) felt constituted knowledge that could be used in working with another cohort of student teachers.

While the work of Alexander (2004) and Clarke et al. (2005) focuses on schools as they relate to either children or student teachers that of Zanting, Verloop and Vermunt (2003) looks at a different aspect. The later researchers looked into how student teachers elicit mentor teachers' practical knowledge. The study illustrates that university-based teacher educators learn about their programmes and how they are received through working very closely with school-based teachers and their own student teachers.

There are several other studies in which teacher educators involved their own students that have provided learning opportunities for teacher educators. Boote (2001), Parsons and Stephenson (2005), Pereira (2005) and Nicol (2006) conducted studies in which they involved student teachers. Nicol (2006) investigated "the pedagogy of teacher talk" with the "pedagogy of what teachers talk is about." Given that the study involved a teacher educator and 14 student teachers, it appears to illustrate collaborative inquiry and how that collaboration facilitates learning.

Nicol (2006) used a reflective approach that employed various data collection strategies, including journal writing by both the teacher educators and student teachers, analysis of course-work, audio tape-recordings of the instructors' collaborative planning sessions and related email messages. Nicol (2006) videotaped recordings of the method course class sessions in both landscapes, namely a university and school classrooms. The study provided a detailed learning experience both for the teacher educators and student teachers. It showed the different approaches of undertaking research and indicated that teacher educators and student teachers can participate in parallel yet related studies, even though the situations were different. The researchers who undertook the studies referred to here allude to the complexity of studying their own practice and at the same time helping student teachers do the same.

While researching their own practice the teacher educators realised that they had to help student teachers research their own practice too. According to Nicol (2006) this approach necessitated not only experience in teaching at the school or university level but also theoretical knowledge as foundational to the work of teacher educators. Additionally, engagement in a study in which the researcher helps her own students indicates modelling thinking about teaching and, therefore, for student teachers, being challenged by people responsible for teacher education programmes (Schulte, 2005).

These studies whose unit of analysis ranged from student teachers in schools or at the teacher education institutions, secondary school students and teachers, helped the researchers to reflect. They reflected on the relevance of the teacher education programmes that were being offered in their institutions. The studies seem to have served as a learning experience for the teacher educators who were involved in the different studies.

#### 3.4.2.4 Teacher Educators Learning from Colleagues

Besides schools serving as places for teacher educators to undertake research and learn from this experience, learning from colleagues is another avenue for teacher educators. This conclusion is based on the premise that there are prospects for learning through involving colleagues as critical friends. Regardless of the fact that Schuck and Russel (2005) were teaching in universities in two different countries, these education professors wanted to study and improve their teaching. They involved a colleague who served as a critical friend, set conditions for the involvement of the colleague and kept a



journal for documenting the experiences. The involvement of a critical friend provided the teacher educators with an opportunity to learn that there were parallel lessons between them and their student teachers. On the part of the teacher educators learning was facilitated through collaboration, whereby the two colleagues worked on a study that compelled them to improve their own practice. Furthermore, their research revealed that new knowledge was generated.

Additionally, preparing a paper for a conference based on the research that tested the involvement of a critical friend presented yet another learning opportunity. However, constraints were experienced in the adopted strategy of involving a critical friend, including the process itself, the duration of the project and failure to engage in dialogue about the process prior to the beginning of the project. Schuck and Russel's (2005) study points to the role that other professionals can play in helping teacher educators learn or gain professional knowledge. The study has also confirmed that colleagues preparing papers for presentation in conferences can assist teacher educators in numerous ways, in particular learning from such experiences.

Therefore there are prospects for learning from collaborating with colleagues. Orland-Barak and Tillema (2006), Griffiths and Poursanidou (2005), Clarke et al. (2005), Bain, Mills, Ballantyne and Packer (2002) are some of the researchers who looked into collaboration in studies that they engaged in. Griffiths and Poursanidou (2005) undertook a study in which they explored collaboration with two colleagues who were responsible for teaching social justice to student teachers. One collaborated with three other tutors who co-taught a module. Student teachers participated in the study through focus group discussion and individual interviews.

Although other teacher educators could not fully collaborate in the study undertaken by Griffiths and Poursanidou (2005), there were lessons that emanated from it. Collaboration in a self-study can be very challenging, especially if those who are required to collaborate do not fully understand their roles. However, preparing and presenting papers in conferences resulted in participants learning more about reflection on the process and on the involvement of colleagues in such endeavours. They also learned about group dynamics within an institutional context, where individuals may have different views regarding collaborating with colleagues. This study illustrates that while collaborating with colleagues might provide learning opportunities, it cannot be

assumed that the results would be positive. However, negative results provide a guide for future research.

It is therefore clear that schools, students and colleagues provide opportunities for teacher educators to engage in research learn, from such experiences and share those experiences. Sharing of experience is possible through, among other outlets, presenting papers in conferences and getting feedback and publishing. However, the context in which teacher educators work is another avenue for research, as was the case in a study undertaken by Samaras, Kayler, Rigsby, Weller and Wilcox (2006). Their study explored the extent to which engagement in the craft of faculty teaching would add to the faculty building a successful collaboration culture with schools. It involved the faculty and tenure-track assistant professors and a school-based master's programme for practising elementary and secondary school teachers.

The research by Samaras et al. (2006) revealed that university-based teacher educators had, through participating in the study, gained a deeper understanding of their collaboration with schools. They had acquired a vocabulary to describe their work and had refined their understanding of learner-centred theory and critical pedagogy in practice, and were convinced that the nature and quality of their collaborative efforts continued to develop. Samaras et al. (2006) confirm earlier assertions that university-based teacher educators have an opportunity to learn from engaging in work that brings them to schools or work that connects them with teachers in the service.

Therefore the research experiences shared in this section of the chapter presents information on research undertaken in the real world of teacher educators. There is no doubt that the experiences shared illustrate the link between knowledge acquired in practice and learning from that practice.

#### 3.4.2.5 Linking Professional Knowledge to Learning from Practice

Linking teachers' professional knowledge to learning from experience showed some inconsistencies. In a study which involved an analysis of 45 teachers' lessons, Kennedy (2002) contrasted craft knowledge with systematic and prescriptive types of knowledge. She found that although teachers made more reference to learning from experience than to any other source of craft knowledge, when asked to be concrete about their lessons there were times when the responses were vague. Kennedy (2002) further established that teachers in the service learn from continuing professional education programmes,

some of which may be facilitated by university-based teacher educators. Such programmes, regardless of their diverse nature, were found to provide learning opportunities for teachers. Additionally, she found that all types of knowledge were valuable in the context of teaching.

In essence Kennedy's (2002) findings indicate that polarisation of types of knowledge is not so important, and that it may present difficulties in the real world of work. However, there is evidence that teachers were confident in responding to questions in the areas of curricular guidelines. They were able to interpret them with more latitude than they could use to respond to questions on other sources of professional knowledge. The relevance of Kennedy's (2002) study to the current one is the finding that experience is a source of knowledge for teacher educators and the extent to which they articulate what they have learned from their experience.

This section on practical knowledge clearly illustrates that what teachers are actually using in practice is not their abstract theoretical knowledge, but phronesis, which entails situation-specific principles. It is context-dependent and helps teachers to arrive at decisions to solve practical problems rapidly. What is important is that it helps teachers in practical situations to perceive what is relevant in the situation and then to base their actions on their perceptions. Thus, what student teachers need to acquire is "knowledge of a different kind, not abstract and theoretical [disciplinary knowledge], but its very opposite: knowledge of concrete particulars" (Korthagen, 2001, p.25).

#### 3.4.2.6 Pedagogical Content Knowledge

Teaching in ways that illustrate the accomplishment of pedagogical content knowledge is the nucleus of the work of teachers and teacher educators. Research that looked into pedagogical content knowledge points to Shulman's (1987) work, which describes pedagogical content knowledge as an amalgam of content and pedagogy. This means what teachers know about their subject matter and how they translate that knowledge into classroom curricular events.

The work of Whewell and Thurston (2010) discusses the design of new primary concurrent degree programmes in one teacher education institution, a programme which aims at maximising the impact on initial teacher education in terms of leading to more effective learning and teaching which would ensure that student teachers develop both

content and pedagogic knowledge and skills. In the 1999 publication, Shulman expounded on his 1987 work as follows:

- content knowledge (C)
- general pedagogic content knowledge (GPK)
- Curriculum knowledge (CK)
- Pedagogic content knowledge (PCK)
- Knowledge of learners and their characteristics (KL)
- Knowledge of educational contexts (KEC)
- Knowledge of educational ends, purposes, and values and their philosophical and historical backgrounds (KPhil).

The elaboration touches on various aspects of the horizon of teacher education and teaching in general. For example, GPK embraces reference to broad principles and strategies of classroom management and organisation that appear to transcend subject matter, while KEC touches on issues of contexts ranging from the working of the group of classroom, the governance and financing of school districts, to the character of communities and cultures. Therefore, instead of looking at the work of teachers as mainly on pedagogy and content, Shulman's expansion on his earlier work illustrates the breadth of teachers' work of which teacher educators have to be cognisant.

The literature on pedagogical content knowledge relates to the enactment of pedagogical content knowledge among expert or experienced teachers and inexperienced or novice teachers (McCaughtry, 2005 & Doyle, 1990). Doyle (1990) cites Carter's study which shows how the two differ. Experts in Carter's study were found to organise and manage instruction in a rich manner, especially when compared with novices.

Doyle (1990) concludes that the studies she reviewed indicate that experts in teacher education, in contrast with the novices, draw on richly elaborated knowledge structures derived from classroom experience. Drawing from rich knowledge helps experts understand teaching tasks and interpret classroom events which in practice shed further light on pedagogical content knowledge. The dimension of expert compared to novice as alluded to by Doyle suggests that experts are more knowledgeable and skilled in the application of pedagogical content knowledge than their novice counterparts.

There are other researchers who, using various research approaches, have studied pedagogical content knowledge (McCaughtry, 2005; Hashweh, 2005). McCaughtry (2005) inspired by the literature on how teachers know subject matter, pedagogy, curriculum and students' learning, used a case study approach to analyse the knowing in instruction of one secondary physical education teacher. Hashweh's (2005) work on pedagogical content knowledge is based on a review of the history of pedagogical content knowledge. It established that there are seven assertions that comprise the new conceptualisation of pedagogical content knowledge. His articulation of pedagogical content knowledge stems from an analysis of research undertaken in this area and he suggests that it be re-conceptualised to embrace "a collection of teacher professional constructions, as a form of knowledge that preserves the planning and wisdom of practice that the teacher acquires when repeatedly teaching a certain topic" (Hashweh 2005, p.273). He further argues that viewing professional content knowledge provides various ways of researching pedagogical content knowledge. These include a precise way of defining it, clarifying its relations to other forms of knowledge and beliefs. Therefore, speculating about its development should facilitate future research in this area.

The findings of these studies (Hashweh, 2005; McCaughtry, 2005), suggest that researching pedagogic content knowledge has been in the context of school-based teachers for some time. Pedagogic content knowledge in departments of faculties of education that offer subject content such as science or English is probably clear too. However, the challenge remains with what pedagogical content knowledge would mean in the context of teacher educators who are based in educational foundations departments in faculties of education. This is an issue worth pursuing with colleagues in the educational foundation departments. These departments teach disciplines such as psychology for students to apply and not necessarily to teach.

The review of literature on sources of professional knowledge illustrates that teacher educators draw their professional knowledge from a variety of sources. Thus, their sources of professional knowledge include propositional knowledge, research in which they may collaborate with colleagues, their own students, serving teachers as well as from engaging in a variety of professional activities. These include documenting their experiences, reflecting on those activities and presenting research-based papers in

conference settings. Teacher educators' sources of professional knowledge are underpinned by practice through which they learn from various experiences.

### **3.5 Learning as a Construct/Paradigm**

Some researchers expound on arguments related to a paradigm shift in teacher education. They point out that a paradigm shift in teacher education requires a deep analysis of the place of episteme and phronesis as theories that underpin knowledge (Slabbert et al., (2009). These researchers write about "learning to know", which entails a realisation that the world is not static. Therefore, students can no longer depend entirely on someone like a teacher to know it all. By implication, learning to know, as was perceived in the past, is fraught with difficulties. Therefore, no one should depend on another for the knowledge that such an individual might need to learn. As these authors argue, learning is constructive in nature. Based on their analysis of the way in which education was perceived in the past they therefore advocate distinctive shifts in the way student teachers are educated, to the extent to which they too will educate their learners at the school level.

Therefore, Slabbert et al. (2009), in advocating a radical change of the aim of education, make reference to several critical issues. Firstly, since learning is radically constructive in nature, in that "radical constructivism starts from the assumption that knowledge, no matter how it is defined, is in the heads of persons, and that the thinking subject has no alternative but to construct what he or she knows on the basis of his or her own experience" (p.54), education systems have to value various experiences with which students enter the schooling system.

Secondly, these researchers make reference to lifelong learning, which in their view would facilitate students' achieving their potential through teachers mainly facilitating that process. They therefore conclude their arguments by pointing out that kindling the potential in every student is crucial and that in doing so teachers have to acknowledge that "potential is personal, located inside the learner and can ultimately only be accessed by the learner him- or herself. No one can maximise potential for or on behalf of the learner ..." (Slabbert et al., 2009, p.49).

Therefore educators, according to Claxton, (1999) and Holdstock (1987), regardless of the fact that they teach, can, for purposes of maximising human potential, merely facilitate the necessary, appropriate and sufficient lifelong learning. It therefore follows,

to adopt the argument of Slabbert et al (2009) that learning is a journey of self-discovery and development to reach the highest possible level of quality of life. Teacher education programme designers should rethink their current programmes, especially if they do not yet embrace lifelong learning as a construct that calls for change.

The work of Slabbert and Gouws (2006) takes the point on learning further. In their research they use an introduction to an accounting education course as a case in point: *The quest for powerful learning environments in higher education*. They indicate that long experience in institutions of higher learning has revealed that major epistemological features of introduction to accounting education as experienced in practice point to three major problems, namely that it is content driven, prescriptive and that it produces technicians. These authors argue for the creation of powerful learning environments which in themselves facilitate the creation of knowledge by the students. In a situation in which learners construct conceptual knowledge there is an assurance that they can be in complete control of that knowledge that they have constructed, and there are high possibilities that they can manipulate it in any way and to their advantage. Slabbert and Gouws (2006) conclude that such learning environments allow learners' intuition to use the knowledge

to do something creatively new, and, in effect a continuous process of constructing knowledge ensues. But of crucial importance is that the knowledge constructed by the individual learner should now be shared with peers through a process of interaction by which the constructed knowledge is assessed and through cooperative learning the learners collaboratively refine the conceptual knowledge with the aid of a facilitator of learning (an expert) to eventually achieve the highest quality of learning (constructed knowledge) (p.345).

Nonetheless, while these authors have proved in their research that engaging students in creating or constructing knowledge is worthwhile, knowledge that gets created has to be authentic and must therefore be validated. Newmann, Marks and Gamoran (1995) instead argue for authentic pedagogy. There is justification for this argument:

Educators and reformers often worry that today's students spend too much of their time simply absorbing and then reproducing information transmitted to them. They fear that students aren't learning how to make sense of what they are told. Also, reformers often see little connection between activities in the classroom and the world beyond school; students can earn credits, good grades and high test scores, they say, demonstrating a kind of mastery that frequently seems trivial, contrived or meaningless outside the school (p.1).

In order to contextualise the issue of authentic pedagogy and authenticating knowledge constructed by students, Slabbert et al. (2009) have made reference to a variety of authors who addressed the issue of achieving authentic learning. In this context these authors indicate, for example, that the learning process has to be initiated by an “incessant challenge to the learner’s living of real life as a whole, so much so that uncertainty is provoked and anxiety not necessarily excluded” (Barnett, 2007, p.257).

In their view, students have to realise that existing knowledge and skills cannot provide a resolution to new challenges. In the real world challenges arise in different ways and/or forms, with some being on problems that already exist while others could be based on a desire to improve life. In such a case a student would be creating a problem where one did not exist. Such cases would require teacher educators to utilise similar practice for their student teachers if they too are to endorse such learning for the learners in the school system.

These arguments by researchers who studied learning are helping contextualise knowledge in teacher education. A visionary teacher education programme therefore has to be realistic to the extent that student teachers are made cognizant of new developments in education and the world of work they would be moving into. Therefore, as articulated in Nuffield’s review (2010), since teaching quality and the relationship between teachers and students are central to successful education, such situations require “a respect for the profession of teaching, for the role of teachers as the custodians of what we value and as the experts in communicating that to the learners” (p.14).

However, advocating radical change in the education of student teachers without justifying the call would make it difficult to convince those who are being challenged to consider changing their familiar positions. The emphasis should instead be on the provision of quality learning as the major reason for proposing change in education systems. Advocates of quality learning argue for the quality of students’ learning processes (Vermunt, 2003). Rethinking the entire purpose of education is justified for some researchers. For example, Slabbert et al. (2009) who, looking at the various facets of life, propose a constructed aim of education for creating the future, see the new aim of education being for “learners to maximise their human potential through facilitating lifelong learning to create a safe, sustainable and prosperous future for all” (p.49).



Presumably, the proposed aim of education would cater for new developments advocated in international fora, such as the world declaration on Education for All (EFA).

### **3.6 Constructing Professional Knowledge**

In the context of teacher education and on the basis of the work of researchers such as Eraut (1994), Calderhead (1988) and Stuart (2002) acquiring and developing different kinds of knowledge and skills happens in the process of learning how to teach. Teachers are in this regard active constructors of their own knowledge. They should also aim for authentic student performance by, for example, calling students to construct knowledge through disciplined inquiry, which would enable them to address problems that have some meaning beyond schooling (Newmann, 1995). In an effort to make sense of the complex situation in which teaching occurs, teachers draw on many sources, which may include formal study and experience in the situated knowledge of the classroom (Stuart, 2002).

However, some level of competency is a prerequisite to constructing professional knowledge. Hence, as argued by Erickson (1988), not all professional knowledge must be constructed by each practitioner. The interpretation further suggests that an experienced teacher educator or indeed an expert might have better ways of constructing professional knowledge. Kremer-Hayon and Zuzouskys' (1995) understanding is that trial-and-error experienced in the process of learning to teach constitutes one aspect of knowledge construction. They refer to their experience as novice teacher educators and at the time not having the necessary knowledge regarding teacher education, indicating that in being a novice there is a need to develop knowledge urgently. It would seem that the construction of professional knowledge can begin as early as at the novice level for some professionals.

It is in the work of Schön (1983) and that of Bereiter (2000 as cited in Paavola et al., 2004) that emphasis is placed on professionals having the ability to construct professional knowledge. In discussing the construction of professional knowledge, Schön (1983) makes reference to Technical Rationality, which entails knowledge in and on action. He argues that technical rationality is one way to think about professional knowledge. In contrast he suggests that Technical Rationality provides only a very limited view of professional knowledge, suggesting that knowledge in action might better describe the knowledge that professionals construct, make sense of and enact.

Schön (1988) indicates further that engaging in activities that enable one to reflect on one's own actions provides a learning experience and an opportunity to design interventions or gain new insights into the phenomenon of practice. These views are consistent with those articulated by some researchers. There are researchers who have looked into using reflective practice theory in their teaching, and in the process have transformed their operational activities after establishing the applicability of research undertaken by practitioners (Tripp, 1993; Whitehead, 1995).

However, while Schön's extensive work on the construction of professional knowledge is widely quoted in education, a number of researchers critique his work. Green (1994) critiques Schön's distinction and argues that if experts or proponents of professional expertise were to be relied upon to fill the gap between the scientific basis and professional knowledge and the demands of the real-world, practice in such a way might serve the model of technical rationality but not disturb teachers' or teacher educators' practical knowledge. This view would be applicable to those practising teachers who know that their teaching is situation-specific and could not be understood in terms of generalisation to other circumstances.

Paavola et al. (2004), basing their arguments on other researchers argue that knowledge can be systematically produced and shared among members of a community. These authors' interpretation implies that once knowledge has been created it has to be made accessible to users. Eraut (1994) cautions that practical knowledge is mainly created in practice in solving individual cases or problems and that in the process professionals contribute "to their personal store of experience and possibly that of their colleagues ... such practical personal knowledge is never codified, published or widely disseminated" (p.54). Eraut's view is being tested by researchers who have undertaken research on practical knowledge and published or disseminated it. Teacher educators who have used self-study as a point of departure from other ways of engaging in research as already alluded to in the preceding sections of this chapter are disseminating findings in this area.

Some of these researchers have a different understanding of the construction of professional knowledge. A study undertaken by Berry (2004), who was aiming to improve her teacher education practice, indicates that the process of developing knowledge of practice requires more than simply sharing personal stories as teacher educators. She acknowledges that she learnt a great deal about her pedagogy through a

careful investigation of her practice. She concluded that investigating her practice meant analysing and challenging the basic assumptions of her work as a teacher educator, and trying to understand, name and frame her experiences.

Most significant about creating knowledge in this regard seems to be adopting a systematic examination of practice that includes sharing research efforts. In order for one to know the extent to which one has contributed to knowledge creation, one needs to do so by systematically sharing findings and getting professional feedback from those who participate in fora in which findings are shared.

Clarke (2001), in a review of teacher education, looked at critical points on the landscape of teacher education and pointed to a number of issues as evidence that teacher educators are creators of knowledge. In particular Clarke (2001) makes reference to the emergence of journals that have teacher education as their principal focus and argues that these reflect a growing development of outlets that regard teacher education and scholarship as one and the same, and regard the practice of each as self-supporting. As noted above, he also makes reference to texts in teacher education, indicating that reference books serve as a resource for students and perhaps teacher educators. Clarke (2001) further argues that value is likely to accrue from professional teacher educators' meetings as fora that serve as an opportunity for sharing knowledge generated by others. Finally, Clarke (2001) writes of research trends in teacher education, confirming that engaging in research facilitates the creation of knowledge.

Underpinning Clarke's (2001) analysis is a long history of work by teacher educators and scholars in teacher education. He extrapolates on issues dealt with in a given period and implies that the construction of knowledge in teacher education has been in teacher education scholarship since it emerged as a field of study. It is the documentation of these experiences and their implication that are of critical importance in his analytic work. Clarke's (2001) call for recognition of "teacher educators" as "scholars" in teacher education institutional homes, faculties or schools of education is grounded in an understanding that it is time to support teacher educators. Teacher educators can be supported through involvement in outlets such as journals, reference books and meetings of professionals.

Clarke's (2001) critical analysis helps one to value how teacher educators and scholars construct professional knowledge in a discipline (teacher education) that is not fully supported. His analysis also strengthens the basis for understanding teacher educators'

and scholars' standing in relation to how the knowledge they construct advances the status of the profession. However, his work falls short of linking their work to the application of created knowledge, particularly in the context of classroom situations.

According to Cochran-Smith and Lytle (2005), across their professional lives teachers play a significant and critical role in generating knowledge on practice. They use their own contexts, including classrooms and schools, as suitable sites for inquiry and therefore as an opportunity to create knowledge. Other avenues for constructing knowledge include the tendency for teachers to work as teams in conducting inquiry, participating in the design and review of curricula and holding leadership positions. It is in the context of challenging and addressing their own assumptions about practice and related issues, in identifying and studying practice-related problems that in the process teachers are viewed as constructing knowledge.

The relevance of the study by Orland-Barak (2006) lies in the framework used to analyse knowledge construction in professional conversations. Although the context and objectives of Orland-Barak's study differs greatly from the context in which the current study was undertaken, the analysis of the conversations presents some interesting findings on professional knowledge. The study: *Convergent, divergent and parallel dialogues, knowledge construction in professional conversations* suggests that participation in professional conversations does provide learning opportunities for those who get involved in such activities. He found that the three forms of dialogue appear to provide valuable opportunities for co-constructing different kinds of understanding about practice.

In his study Orland-Barak (2006) established that divergent and parallel dialogue can constitute important opportunities for constructing knowledge. This may be more so because they prompt a discourse in which professionals expose, scrutinise and contest deeply ingrained assumptions about their practice. However, as he argues, this process requires a 'mentor of mentors' to ensure that a relationship between facilitating professional conversations and learning from that facilitation is attained. Professional conversations tend to extend to teacher educators who supervise student teachers' research.

In practice teacher educators engage in the supervision of research undertaken at postgraduate level. There are writings that indicate that work in this area, while fulfilling to those who play the role of supervising, has numerous challenges for both the students

and their supervisors (Jansen, Herman & Pillay, 2004, Fataar, 2005). For Jansen et al. (2004), students' individual research journeys, due to among other things unclear steps to be followed in producing a research proposal, experience a number of problems, some of which are emotional to the extent that students sometimes "break down". Fataar (2005) engaged in a study that specifically looked into the supervision of research of doctoral students, basing his research on personal observations and reflective notes made throughout the proposal supervision process and two hour interviews with her two doctoral students. She concluded that the supervision of doctoral proposals was largely successful because of the students' ability to incorporate elements of a scholarly identity in their work. Incorporating these elements enabled PhD researchers to ask appropriate academic questions. Fataar (2005) was of the view that her role in the supervision process was to facilitate a shift from just thinking at the level of a student to an immersion into the required academic and intellectual repertoires required for proposal writing.

Fataar's (2005) admission to having developed her own personal professional reflexivity through the supervision process points to creating personal knowledge through reflecting intensively on the process, entering into dialogue with the PhD students, and reflecting on her role as research supervisor. Therefore, with hindsight, Fataar's supervision of doctoral students was in many respects an application of professional knowledge in her capacity as a teacher educator.

### **3.7 Application of Professional Knowledge**

The application of professional knowledge involves knowing how to enact professional knowledge in relevant contexts or in practice. It requires the ability among teacher educators to enact the pedagogy of teacher education and also model what they expect of their prospective teachers. The literature points to the need on the part of teacher educators to enact professional knowledge. Alexander (2004) argues that, "observing student teachers and telling them what they should do or what they (teacher educators) would do is hardly the same thing as actually doing it" (p.624). Studying prospective teachers' activities at the expense of researching one's own work could be regarded as distancing teacher educators from investigating their own teaching and documenting their professional experiences.

There is evidence that teacher educators have been studied by other researchers and that they have also researched their own practice. The Multi-Site Teacher Education Research (MUSTER) project reported in Chapter 1 had as one of its sub-studies curriculum as delivered. The MUSTER sub-study followed an observation approach in collecting data on curriculum as enacted. This sub-study found that in all the countries that participated in the sub-study, most teaching followed a transmission mode, with lecturing and question-and-answer sessions being the most common (Lewin & Stuart, 2003).

In general, the use of observation, although the analysis took into consideration the documented curriculum, appears to have been restrictive. Interviews of all the research participants would potentially have revealed their views on why they acted in the way they did. The MUSTER Project, while it did not focus on the application of professional knowledge per se, demonstrates a case where teacher educators were being studied in practice. Contemporary literature as referred to above, however, suggests that researching one's own field of study necessarily impacts on teacher educators themselves in ways that could help improve their practice. This is one of the reasons for concluding that research by teacher educators themselves especially in their teacher education context is a worthwhile endeavour. The currently advocated approach of research for teacher educators is self-study.

The emergence of "self-study" research therefore calls on teacher educators to research their professional activities in ways that could contribute to transforming their field of study. There are claims that systematically inquiring into learning through self-study research (Loughran and Berry, 2005; Smith, 2003, Korthagen, Loughran and Lunenberg, 2005, Hamilton, 2005, and Clarke and Erickson, 2004 as articulated by Loughran and Berry, 2005) enhances the possibilities for teacher educators to see the relationship between received knowledge and the actual use of that knowledge in practice. However, Samaras et al. (2006) propose that an interest in self-study research "must come from the teacher educator who is willing to utilize the knowledge gained through examining the self to reframe and better understand practice and provide meaningful learning experience for students" (p.54).

Nevertheless, there are claims that teacher educators who study how they are learning, how they generate knowledge and how they enact teacher education curriculum tend to improve their work. This view is confirmed by Tom and Valli (1990) who maintain that

research findings are a source of professional knowledge for they provide teacher educators with information needed for reviewing teacher education programmes.

Some teacher educators have actually ventured into researching classroom practices and in a sense researching enactment of professional knowledge. In a study undertaken by two instructors in which they, as course instructors, explored two pedagogical moments that occurred within a diversity-focused secondary teacher education course, Freedman, Bullock and Duque (2005) found that their teaching faced numerous challenges. Reflective moments provided for the instructors were facilitated by problematising their teaching stances.

Hug and Moller (2005), tenured assistant professors, engaged in a study similar to that of Freedman et al., (2005). The latter researchers examined themselves as educators, their organisation of instruction and the possibility of collaborative work in pre-service teacher education across two disciplines namely; Science and Language Arts. To Hug and Moller (2005) their experience provided a learning opportunity, with the study helping them to improve as they acknowledged that they felt they had grown as university-based educators. In the analysis of the data they identified key areas that contributed to enhanced learning. Their research participants, namely student teachers and teacher educators, learned from reflecting on classroom experience. The teacher educators learned from their own students' experiences. One of these researchers was able to make sense of how s/he "enacted the curriculum in critical ways yet they (were) not able to use their dominant culture lenses to support the student's understanding of the critical issues" (Hug and Moller, 2005, p.600). It is reflection on the findings of the researched topics that brings value to the work of teacher educators who study their own practice and subsequently have an impact on their own practice.

### **3.8 Modelling Professional knowledge**

The application of professional knowledge has implications for modelling teaching. Loughran and Berry (2005) engaged in a study in which they deliberately wanted to model the practice of teaching. In their work on modelling by teacher educators, they discuss their understanding of it. The discussion is based on a self-study which was longitudinal in nature in which they were both involved in Developing Pedagogy. They describe explicit modelling as

operating concurrently at two levels. At one level, explicit modelling is about us “doing” in our practice that which we expect our students to do in their teaching. This means we must model the use of engaging and innovative teaching procedures for our students rather than “deliver” information about such practice through the traditional (and often expected) transmissive approach. At another level, there is also a need to offer our students access to the pedagogical reasoning, feelings, thoughts and actions that accompany our practice across a range of teaching and learning experiences. We make such access through ‘thinking aloud’ ..., journaling, discussions during and after class with groups and individual student teachers... (p.194).

The study illustrates a desire by these researchers to model what they believe their own students should be able to replicate once they are teachers themselves. They chose to engage in the study fully cognizant that the articulation of knowledge of practice is a difficult and a complex task. It demands considerable awareness of oneself, pedagogy and students. Employing a self-study methodology in which they engaged their own student teachers, Loughran and Berry’s (2005) study reveals that opportunities for teacher educators to learn from a demanding process are fraught with tensions. Most significantly, they conclude that the exposure they went through facilitated metalearning or learning beyond the immediate, and uncovering learning about learning and teaching as experience.

Modelling can be deliberately played out in a manner that those for whom it is being played out are able to observe it. However, modelling can happen without a person who is being modelled being aware of the modelling. Two studies undertaken by different researchers, namely Brandenburg (2004) and Hug and Moller (2005) involved student teachers. In a study in which using negotiations as a strategy to involve his students, Brandenburg (2004) explored “roundtable reflection” as an innovative approach to learning and teaching Mathematics. He pointed out that “underpinning this restructured approach to teaching and learning was the assumption that practices, frameworks, modes of operation and understandings would be challenged” (p.3). The research was informed by extensive work on self-study including the work of Russell (1995), which for Brandenburg (2004) suggested that teacher educators should advocate changes that they had achieved in their own practice.

The case of Hug and Moller (2005) illustrates modelling in which a study by teacher educators examined, among other things, how they modelled teaching, listening and learning. The two teacher educators who were involved in the study taught different courses, namely Science and Literacy. Specifically the two teacher educators’ intention



was to illustrate best practices of teaching by demonstrating how subjects can be integrated and made relevant to students' lives. They had assumed that seeing collaborative teaching and learning modelled by two new tenure-track assistant professors could make it easier for their student teachers to practise this way of teaching when they themselves began working as teachers. They were participants in the self-study research in which their students became part of the context of their teaching.

While the findings of the study extend beyond modelling, the two authors argue that their research contributes immensely to their professional development as university teacher educators. Hug and Moller (2005) concluded with a hope that "their stories will serve as a model for other educators engaging in their own collaborative teaching and self-study" (p.138). While it involved student teachers in such a manner that they were conscious of the activities involved in the study, the study pointed to modelling in the context of teacher education as grounded in the actual teaching itself. The use of the term *hope* by these researchers implies that even though they deliberately modelled a particular aspect of their teaching, there was no guarantee that student teachers were going to emulate the modelled aspect of teaching.

Other educational researchers make reference to research work (Cole, 1999) that focuses on modelling. Hamilton (2005) analysed modelling as demonstrated by a professor in her institution. Lessons that were modelled focused on the work of teachers and the value of research. Through exploring the complexities of teaching and the contradictions inherent in the learning-to-teach process, and in the development of educational theory, she saw the need to learn through experience. In learning through experience she was able to bring trustworthiness and respect to the work of teachers and teacher educators. Successful modelling relies on teacher educators being knowledgeable about their own practices as educators.

Failure to model what is expected in a programme has some disadvantages. Student teachers who may not be aware of programme goals and objectives may leave a teacher education institution without having learned about the expected outcome of the programme as it would not have been modelled for them. Ntoi and Lefoka (2002) made reference to modelling of good practice and that teacher educators' failure to observe the demands of a programme which was intended to integrate theory and practice implied that student teachers could not observe that good practice that was theorised about in the actual teaching. These authors concluded that in a situation where theory is

considered more important than practice as was the case in the research they undertook, the message conveyed is that “it is impossible to follow the fundamental precepts of good teaching” (p.282).

Modelling is yet another complex theory which is not tangible. However, research alluded to in this section of the chapter has revealed that there are prospects for modelling in the context of teacher education. Student teachers have opportunities to learn through observing their educators in practice.

### **3.9 Conclusion**

In reviewing the literature regarding the sources and application of professional knowledge among teacher educators, a number of profound issues were revealed: some of them well known but important to revisit, and others that pose serious challenges. The first is that the sources and application of teacher educator professional knowledge is inextricably linked with the education practice in the classrooms. In fact, education practice in the classrooms determines the nature and structure of *teacher* professional knowledge and practice, and the latter determines *teacher educator* professional knowledge and practice. The sources and application of teacher educator professional knowledge can therefore not be considered without education practice in classrooms and the required teacher professional knowledge.

Secondly, however, as we know, there is always some kind of discrepancy between education policy and practice in the classrooms. Teacher educators’ professional knowledge should have the latter as its primary concern because it is education in practice that eventually counts. In this sense, teacher professional knowledge and subsequently teacher educator professional knowledge need to include the importance of assuring a policy-practice match.

Thirdly is the issue of contemporary education discourse recognising the challenging demands for education within a super-complex world with an unknown future. The subsequent qualitatively different demands *on* young people result in equally compelling and qualitatively different demands *of* young people on the education that they need. Traditional education that was concerned with an epistemological task has to be replaced with an education pursuing an ontological challenge as primary aim. No doubt education in general has not been prepared to take on such a challenge. Subsequently,

traditional teacher and teacher educator professional knowledge and practice are inadequate to fulfil the demands of young people on education.

Fourthly and lastly, a culture of compliance with policy as *perceived* quality is obscuring our vision of actual, authentic quality in education being the only thing that really matters.

There are many and varied sources available for teacher educator professional knowledge and there are many and varied ways that the teacher educator professional knowledge originating from these sources could be applied. However, all sources and applications of teacher educator professional knowledge are in jeopardy unless they are benchmarked by the identification of actual, authentic and quality education. That is why contemporary educational discourse requires that student teachers should be challenged to construct their own professional knowledge. They can do so through inquiry-based concrete experiences of education in practice as an unadulterated measure of the level of the actual education quality they have provided – not an easy task if it was a failure. This is even truer when they need to take the responsibility to improve on it through a continual process of informal and formal inquiry – which may fail again in future.

The idea of taking responsibility for their own learning and their own construction of their own professional knowledge is a daunting endeavour for student teachers, even though they are appropriately facilitated during the process because they are confronted not with what they know, but their sense of self and who they are becoming. This constitutes personal transformation. The argument posed by Palmer (1998) with reference to schooling is equally valid for teacher education and subsequently teacher educators: He says that students may leave the institution deeply dissatisfied even though they were served by good teachers. This statement has intrigued and at the same time empowered me to strive for good teaching which challenges students. But Palmer was referring to dissatisfaction of a different kind, whereby students who have been well served by good teachers may walk away angry, angry that their prejudices have been challenged and their sense of self shaken. That sort of dissatisfaction may be a sign that real education has happened.

The challenge for teacher educators is that they also have to construct their own professional knowledge through enquiry based authentic experiences. This would be to ensure that their utilisation thereof will have the desired result of how to design, implement and evaluate the most powerful learning environments for student teachers

within which they have to find the best possible sources. The purpose would be to help them to construct and use their own professional knowledge in new creative ways to enhance their professional development.