

# CHAPTER ONE

## INTRODUCTION

This chapter introduces the broader context in which this research was conceived. This research involved a study of the Physical Education (PE) component of primary school teacher education at one university and investigation of pre-service teachers' *perceptions of preparedness to teach PE*. This chapter has three sections. The first section describes the *Context for this Research*. The second section provides an *Overview of the Investigation* through description of aim, problem, phases, design and limitations. The final section outlines the *Organisation for this Thesis*.

### CONTEXT FOR THIS RESEARCH

In this section, the context for this research is introduced. The investigation of pre-service teachers' perceptions of preparedness to teach primary school Physical Education at one university was surrounded by circumstances that could be categorised in five areas. Circumstances describe background conditions that existed in the state of New South Wales (NSW) prior to 2008 when data was collected for this study. Conditions described in this section include: *NSW State Government Schools*; *Teacher Recruitment for NSW Primary Schools*, *NSW Curriculum Framework*; *Status and Place of Physical Education in NSW*; and *Primary School Teacher Education*. Collectively, these circumstances describe the context for the research.

### NSW State Government Schools

New South Wales (NSW) is one of six states and two territories comprising *The Commonwealth of Australia*. Schools in NSW are generally classified as one of three education providers, namely, state government, Catholic Education and Independent. A NSW state government school is “defined as one under the control of the Board of National Education (1848-1866), the Council of Education (1867-1880), the Department administering education since 1880 or one under another government department” (New South Wales Department of Education and Training

[NSWDET], 2010). In principle, these schools address issues of entitlement to school education to all children in NSW. This is achieved through provision of a public education system that is free, compulsory, and secular.

Since The Public Schools Act was passed in 1866, several types of NSW state government schools evolved to form the public education system. Essentially, the three dominant types of schools, namely primary, central, and secondary schools are organised by students' age and stage of education. Primary schools cater for school-aged children in the first seven years of schooling from five years of age. Central schools cater for children in the first eleven years of schooling. Secondary schools cater for post primary school-aged students together with those from central schools electing to complete the final two years of schooling.

Government schools are the major provider of primary school education in NSW and thereby employer of primary school teachers. The 2011 February census of *New South Wales Department of Education and Community* (NSWDEC), which was formerly known as the *New South Wales Department of Education and Training* (NSWDET), registered 438 049 public school primary enrolments. With an average primary school class size of 24.6 children, teacher recruitment is a major state government concern.

### **Teacher Recruitment for NSW Primary Schools**

In the state of NSW, teacher recruitment for government schools is centrally administered with policy decisions mandated by a government department. On the other hand, teacher recruitment for non-government, Catholic, and Independent schools involves direct employment of staff by school personnel (Ramsay, 2000). Systemic variation in recruitment policies and practices has created a circumstance whereby the type and qualification of teachers recruited for NSW schools varies across sectors and providers.

For NSW primary schools, DET policy mandates employment of class teachers (read also as generalist or classroom teachers) whilst policies for staffing of non-government included specialist teachers. Notionally, a class teacher is positioned in a school to overview the total development of a class-sized group of children for a calendar year. Hence, class teachers are responsible for the learning and welfare of

each child in that class whilst at school (NSWDET, 2000). By contrast, primary school teachers recruited for non-government schools may include specialist teachers. Specialists are qualified to teach specific curriculum areas to classes of school-aged children across all years of schooling (K-12). In this way, one teacher delivers one area of curriculum to multiple classes in a calendar year. Examples of curriculum areas taught by specialist teachers include music, art, science, language, and Physical Education/Sport.

Typically, the staff structure for a NSW government primary school is organised as a three-tiered hierarchy. The first tier comprises class teachers. The second tier includes class teachers who assume additional administrative responsibility for a cluster of classes or Stage of schooling. The final tier consists of a teacher, termed Principal, who provides school leadership. This system of whole school organisation influences the number and type of teachers to be prepared for recruitment. By comparison, secondary schools are organised around subject teaching. This priority changes the expectation for requisite knowledge and skills for teachers employed in secondary schools.

Teachers employed to deliver primary school Physical Education in NSW follow a dichotomous model. Generalist class teachers are employed in government schools whilst specialist subject teachers may be employed in non-government or independent schools. Questions of equity and efficacy of existing models of teacher recruitment (generalist or specialist) are an important sub-context for this study. A further sub-context is the “apparent silence” in NSW regarding teacher roles beyond those contained within the dichotomous generalist-specialist model and the unfulfilled potential of these alternatives.

### **NSW Curriculum Framework**

As school curriculum in Australia is the responsibility of state or territory governments, curriculum frameworks in NSW co-exists with those from other states and territories. In NSW, the Education Act (1990) mandates for school education a Key Learning Area (KLA) curriculum framework. These learning areas constitute a broad grouping of subjects by which schools and school systems organise and manage the scope of curriculum. In addition, the Act requires a statutory body to be responsible for school curriculum. This body, named the NSW Board of Studies

(NSWBOS), claims to ensure provision of a “well-balanced” curriculum to the State’s school-aged population. In concert, the dominant curriculum framework together with decisions by the regulatory body result in a primary school curriculum organised into six KLA and secondary school curriculum into eight KLA.

For school-aged children between 5 and 12 years of age, the six KLAs of primary school education defined “the scope of the primary curriculum” (NSWBOS 2000, p.12). The six KLAs are: English; Mathematics; Science and Technology; Human Society and Its Environment; Creative and Practical Arts; and Personal Development, Health and Physical Education. Syllabuses for each KLA were produced by the NSWBOS. The same syllabus model was adopted for each KLA. This model included statements of aims, objectives, content, and outcomes. An expectation of the government department responsible for education and training in NSW was that “Schools must provide learning experiences in each of these key learning areas for each child during each year of primary schooling” (NSWDET, 2000, p.4).

Notwithstanding, the centralised organisation of primary school curriculum in NSW, school systems and schools are ultimately responsible for curriculum implementation. This discretionary power when accompanied by a lack of procedures to ensure accountability creates a circumstance whereby some schools may not deliver the full range of “promises” of school curriculum. For instance, the Australian Council for Health, Physical Education and Recreation (ACIPHER) claims that “the discretion given to schools as to how physical education outcomes are achieved with little apparent accountability has added to declining standards in physical education across the country” (Quelch, 2009, p.12). This junction or disjunction between legislative commitment to a “well-balanced” school curriculum and school-based accountability for delivery of each KLA is important in understanding the need for this investigation. This sub-context created a circumstance whereby teachers in NSW primary schools were ultimately responsible for curriculum delivery and therefore, for each KLA, the scope and depth of student learning.

### **Status and Place of Physical Education in NSW**

At the time of this study, Physical Education in NSW was identifiable in both school and tertiary education. In terms of status, school Physical Education conformed to Hoyle's (1986, p.43) suspicions that "physical education is universally lower rather than higher in the pecking order of school subjects". In NSW, this school subject was reported as marginalised in reports of the Senate Inquiry (1992) and studies by Morgan (2005), Morgan and Bourke (2005b), and Morgan and Hansen (2007a; 2007b). In the tertiary sector, status varied according to institutional priorities. In many respects, the status of PE and the possibility for marginalisation in one or both sectors reflected national and international trends for universities generally (Goc-Karp, Kim & Skinner, 1985) and for schools and teachers beyond NSW (Crawford Report, 2009; Curtner-Smith, 2001; Evans, 1988; Hardman & Marshall, 2000; Hendrey, 1975; Hoyle, 1986; lisahunter, 2006; Macdonald, 1995; Siendentop & O'Sullivan, 1992; Sparkes, Templin & Schempp, 1993; Tinning, Kirk & Evans, 1993; Schempp, 1989; Wright, 2001).

With respect to "place" or positioning, a close association may be described between school and tertiary Physical Education in NSW. Tertiary Physical Education evolved as a means to prepare teachers to deliver school PE. Juxtaposed in this way tertiary PE evolved as the study of pedagogy and practice required to deliver the KLA known as *Personal Development, Health and Physical Education (PDHPE)*. As syllabus documents did not stipulate for teachers a definition for *Physical Education* nor subject matter, content strands, or outcomes directly attributable to it, PE was situated as an integrated sub-discipline of a KLA. Consequently, tertiary Physical Education was oriented toward delivery of either the primary school syllabus (i.e. NSWBOS K-6 PDHPE) and/or secondary syllabuses (i.e. NSWBOS 7-10 PDHPE together with Preliminary and HSC PDHPE).

According to the NSWBOS K-6 PDHPE syllabuses (1999; 2007), the subject matter of primary school PE, and by inference, of teacher education pedagogy and practice, was embedded in eight interrelated strands namely: Active Lifestyle; Dance; Games and Sports; Growth and Development; Gymnastics; Interpersonal Relationships; Personal Health Choices and Safe Living. Syllabus rationale, aims

and objectives framed PDHPE within concerns for the development of the “whole person” through knowledge and understanding, skills and values and attitudes needed to lead healthy, active and fulfilling lives. Arguably the syllabus portrayal of Physical Education as a sub-discipline of a KLA may have contributed to perceptions of the marginalised status of PE in NSW.

The close association between school and tertiary Physical Education may also extend to issues of quality. The Australian Council for Health, Physical Education and Recreation (ACIPHER) “agrees that the limited physical education training in many primary teacher university courses is a significant contributor to the decline of quality teaching of physical education in schools” (Quelch, 2009, p.12). This association between tertiary and school-based PE with respect to poor quality of PE programs in primary schools follows trends reported internationally (Iisahunter, 2006) and nationally (Macdonald, 1995; SSCERA, 1992; Thompson, 1996).

### **Primary School Teacher Education**

In NSW, twelve universities offer primary school teacher education to prospective primary school teachers. As was the case for Australia generally, NSW universities and colleges had considerable autonomy defining the nature of teacher education programs. Consequently, the state’s program offerings were characterised by institutional differences reflected in “the number and kind of teachers to be trained, the curriculum and course length” (Ramsay, 2000, p.167). Irrespective of institutional diversity, two major influences shaped the nature of teacher education programs. The first was the recruitment needs of the largest employer of teachers, namely, NSWDET. This government body required generalist teachers capable of delivering all six key learning areas of the NSW BOS curriculum. The second influence was the Australian Qualification Framework that defined the minimum expectation to qualify as a primary school teacher as four years of full-time study or equivalent.

Apart from the formal requirement of a minimum four years to attain teacher qualification, institutional autonomy resulted in significant variation in the quality of teacher education across providers (Danielson, Ellis, & Elliott, 2005a; Ingvarson, Beavis, & Kleinhenz, 2004; Ingvarson, Beavis, Ingvarson, Beavis, & Kleinhenz, 2005). Generally, program diversity was sustained by a culture of program

endorsement as opposed to accreditation. In NSW, for example, most providers of teacher education before July 2006 were self-accrediting (Ingvarson, Elliot, Kleinhenz & McKenzie, 2006). Typically procedures involved internal accreditation of teacher education programs followed by endorsement by the NSW Department of Education's *Teacher Qualification Approval Process* (TQAP). This process not only ensured quality assurances but also supported program diversity.

The program of teacher education under study was situated within the broader context of teacher education program diversity in NSW. As a provider of teacher education, this rural and regional university offered several degrees oriented to primary school teacher qualification. Concerned by report findings and research evidence that class (or generalist) teachers felt unprepared to teach primary school PE, the *Health, Physical Education and Sports Studies (HPESS)* team at this university introduced a PE specialization into Primary School Teaching Awards in 1999. As an educational idea, the HPESS program afforded pre-service teachers the opportunity to study Physical Education beyond the minimum qualification requirement, namely one 6-credit point unit of study in PDHPE. Additional unit offerings served to immerse these teachers in perspectives, viewpoints and pedagogical approaches beyond those experienced in the core PE curriculum unit. Whilst all graduates of the program received a B.Ed. (Primary) degree regardless of the level of specialisation in Physical Education, this suite of PE electives created "stepping-stones" between graduating as a generalist (classroom) and specialist teacher.

As shown in Table 1.1, the HPESS program consisted of twelve 6-credit point units of study in Education/Physical Education (EDPE). Two of these offerings namely, EDPE214 and EDPE941 were mandatory core units of study with a focus on the primary school component of the key learning area in NSW known as *Personal Development, Health and Physical Education (PDHPE)*. Core units also included theoretical topics such as growth and development, motor learning, and skill acquisition. The remaining ten, elective units provided more in-depth examination of foundational studies relevant to PDHPE, Sport and/or Health Promotion. The optional *Specialist Practicum* completed during the final semester internship had no credit point value. This practicum involved placement of pre-service teachers for

the mandatory ten-week internship of the B.Ed. (Primary) degree program at a primary school with a demonstrated commitment to Physical Education.

Effectively, enrolment options for internal or on-campus pre-service teachers were EDPE214 plus three elective units and the *Specialist Practicum*. For external or off-campus students, unit offerings were EDPE941 and up to five elective EDPE units. Further information pertaining to unit aims, outcomes and content for each EDPE unit in Table 1.1 is found in Appendix A.

Table 1.1

*Structure of the HPESS Program*

CORE UNITS	ELECTIVE UNITS			
<b>INTERNAL or ON-CAMPUS MODE</b>				
<b>EDPE214</b> Teaching Primary PDHPE	<b>EDPE201</b> Advanced PDHPE Curriculum Studies (Primary)	<b>EDPE245</b> Human Physical Performance	<b>EDPE243</b> Movement & Skill 1	<b>SPECIALIST PRACTICUM</b>
<b>EXTERNAL or OFF-CAMPUS MODE</b>				
<b>EDPE941</b> Health & Physical Education In The Primary School	<b>EDPE245</b> Human Physical Performance	<b>EDPE243</b> Movement & Skill 1	<b>EDPE341</b> Sports Coaching: School-aged Children	<b>EDPE 342</b> Motor Skill Acquisition
	<b>EDPE343</b> Health Promotion In the Schools & Community	<b>EDPE344</b> Special Issues In Health & PE	<b>EDPE441</b> Advanced Sports Coaching	

A unique aspect of the HPESS program was the *Specialist Practicum* accessible only to internal (on-campus) students. For EDPE majors, the internship involved generalist classroom teaching across all areas of curriculum for six weeks followed by specialist PE teaching across all school stages for four weeks. An Action Research Project related to an aspect of this teaching period was also required. During the specialist component of the internship, university lecturers from the HPESS team supported the pre-service teacher. Supervision included school visits augmented with telephone and email correspondence. Typically, the intern identified foci for supervision and supervisory-related activities.

In summary, the context for the study has been described as multi-faceted comprising five sub-contexts. Circumstances associated with these contexts include characteristics of NSW state government schools, teacher recruitment policies, the NSW curriculum framework, status and place of school and tertiary PE, and teacher education program diversity.

### **OVERVIEW OF THE INVESTIGATION**

This section provides an introductory overview of the investigation. Included in this overview are brief descriptions for the study's: *Aim*; the *Problem* being addressed, *Phases* of the investigation; *Research Design*; and *Limitations* of the study.

#### **Aim**

The provision of “quality” Physical Education to all primary school-aged children in NSW irrespective of whether they attend a government, non-government or independent school is central to this investigation. The aim of the research is to advance theory and researched-based evidence underpinning preparation of class teachers whose responsibilities include delivery of Physical Education.

#### **Problem**

The problem under investigation manifests differently for three population groups in NSW. The first group refers to primary school-aged children attending government (public) schools. For this population, the problem is a lack of physical education entitlement. The second group is pre-service teachers responsible for future delivery of Physical Education in NSW primary schools. For this group, the problem is the marginalisation of Physical Education in schools which has become manifest as a “perpetuation of a non-teaching ideology” (Morgan & Bourke, 2008, p.12). This ideology creates a circumstance whereby “quality” Physical Education has no visible or conceptual presence in many schools. The final group is Physical Education Teacher Educators. For this group, the problem is responding to research evidence suggesting that primary school teachers lack confidence and qualification to teach Physical Education, due in part to inadequate teacher training (Moore, Webb & Dickson, 1997; Morgan & Bourke, 2005b). In summary, the problem addressed in this investigation has concurrent issues in Physical Education related to pupil entitlement, subject marginalisation and teacher education outcomes.

### **Phases**

The research reported in this thesis involved three phases of investigation termed the *pre-empirical* (Punch, 2009), *exploratory-empirical*, and *empirical* phases. During the *pre-empirical phase*, research questions were formulated for the investigation, data types and collection methods were selected, and a research design proposed. During the *exploratory-empirical phase* data collection instruments were developed, piloted then refined, and the potential of the research design and methods to address the research questions was explored. The *empirical stage* constitutes the main study and involved collecting and analysing data to answer the research questions.

### **Research Design**

To appropriately investigate the research topic and ensure trustworthiness of the findings, a mixed method, cross-sectional research design was selected. This design required the researcher to collect data from multiple sources using multiple methods, conduct concurrent analysis of survey and interview data, and triangulate results to draw conclusions and implications.

### **Limitations**

Interpretive research of one social phenomenon in one setting by one research-practitioner has limitations. These limitations were addressed by employing two strategies. The first strategy was careful selection of research design and methodologies. The second was reporting sufficient contextual information to ensure findings from this study are understood as a set of local or institutional meanings intended to advance, rather than test, theory.

## **THE ORGANISATION OF THIS THESIS**

This thesis is organised into eight chapters. This chapter has introduced the context surrounding pre-service Teacher Education in NSW. Chapter 2 presents a review of literature relevant to this investigation. Chapter 3 backgrounds the status of theory in the discipline known as Education and describes a preferred theoretical orientation for this study. Chapter 4 details the methodology including a description for participants, instruments and procedures to collect, analyse and interpret the data.

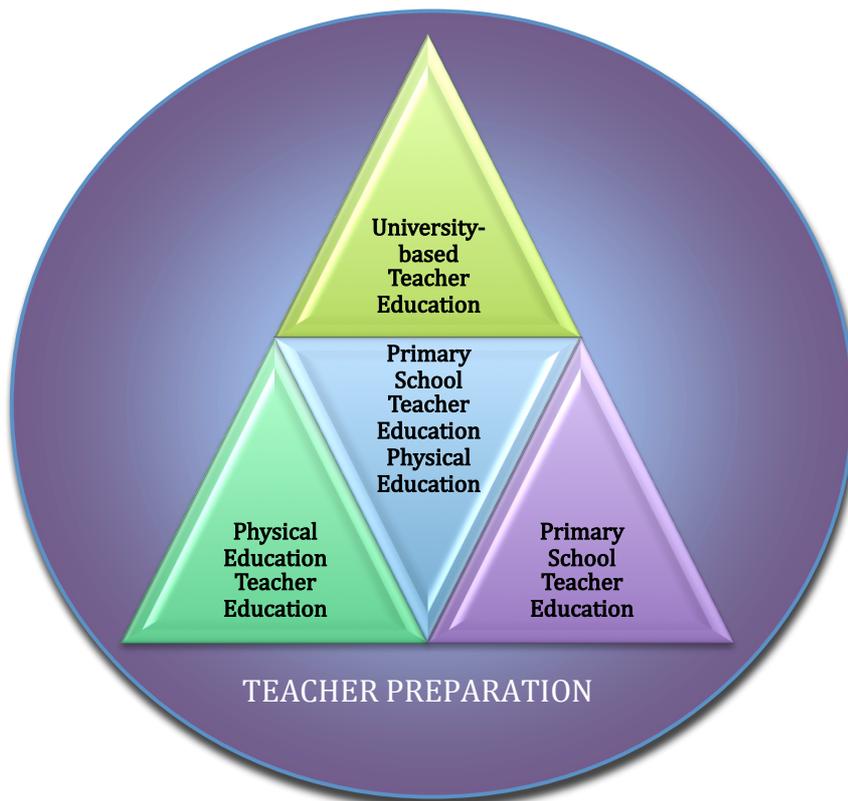
Chapters 5, 6 and 7 report the results and discussion for each of three research questions formulated for the study. Chapter 5 has a focus on pre-service teachers' *Perceptions of Preparedness to Teach Physical Education*. The focus for Chapter 6 is *Contributors to Pre-service Teachers' Perceptions of Preparedness To Teach Primary School Physical Education*. Chapter 7 addresses questions of increasing Primary School Teacher Education-Physical Education as *Transforming Perceptions of Preparedness To Teach Primary School Physical Education*.

Chapter 8 concludes the thesis with *Findings, Implications and Limitations*. The chapter begins with a synopsis of research findings discussed in relationship to the literature followed by a précis of implications for different levels of teacher preparation. The chapter closes with limitations of the study followed by recommendations for future research.

## CHAPTER TWO

### LITERATURE REVIEW

This chapter provides in six sections a review of literature relevant to the study. The first section describes the context of the review, namely *Teacher Preparation*. The next four sections present perspectives for *University-based Teacher Education*, *Primary School Teacher Education*, *Physical Education Teacher Education (PETE)* and *Primary School Physical Education Teacher Education (PS-PETE)*. This chapter concludes with a summary of *Research Issues and Implications*. The review in overview is shown in Figure 2.1.



*Figure 2.1. An overview of this review of literature*

The review begins with the broad idea of *Teacher Preparation*. More specifically, ideas related to the *Purpose* of teacher preparation and conceptions for *Teacher and Teaching*.

### TEACHER PREPARATION

The idea of *teacher preparation* polarises debate. At one extreme, Dewey (1938, p.47) argued that "... 'preparation' is a treacherous idea" in education leading inevitably to contradiction and distortion. At the other, Hansen (2008, p.24) claims the idea juxtaposes "communication about what teachers need in their teacher preparation programs with dialogue about what teachers deserve if they are to carry out the distinctive, complex and indispensable tasks that society sets before them." Between this treachery and juxtaposition is a diversity of views.

A challenge to any review of teacher preparation literature is locating the boundaries of the literature. Following a review of teacher preparation literature from the United States, Wilson, Floden and Ferrini-Mundy (2002, p.5-6) concluded that:

There is no single phenomenon, no monolith called "teacher preparation." So while the phrase "teacher preparation" seems familiar to us all, it is falsely so, for teacher preparation means different things across the United States.

This conclusion was consistent with findings from this review of a broader range of literature. Further, the idea of *teacher preparation* as portrayed in literature is multifaceted and conceptually elusive.

Typically, the evolution of the idea of *teacher preparation* is portrayed as a set of enduring questions, binaries or dichotomies. O'Donoghue and Whitehead (2008) illustrate this portrayal with questions related to whether preparation is: necessary or unnecessary; training or education; an art or a science; set in schools, specialised colleges or university and serves the interests of individuals, students, schools or governments. Dyson (2005, p.37) identified binaries in Australian literature between: education and training; theory and practice; teacher supply and demand together with preparation of professional teachers and skilled, competent practitioners. *Teacher Preparation* provides a complex context not only for review of literature (Wilson et al., 2002) but also for research.

Given evidence for the multifaceted and complex nature of *teacher preparation*, an important role for research is to "untangle" complexity. In so doing, research may "inform and enrich the debate about how teachers should be prepared for their work

... and provide a database and set of frameworks for thinking about different approaches and alternatives to teacher preparation” (Feimen-Nemsar, n.d, p.44). Yet, there is a “lack of depth of research on teacher preparation” (Floden, et al., 2003, p.5-6) that is “a long way from the stage of converging evidence and professional consensus” (Whitehurst, 2002, p.40). Consequently, teacher preparation research may be considered in its “infancy”.

Two issues emerged from the literature relevant to this study. The first were multiple meanings for the *Function or purpose* of teacher preparation. The second issue relates to diversity for meanings of *Teacher and Teaching*.

### **Function or Purpose**

In the context of “untangling” the complexity of teacher preparation, Emmet’s (1958) differentiation of *function* from *purpose* has been insightful. According to this view, *function* supports the reproduction or maintenance of existing ideas for teacher preparation often shaped by social, economic, political and cultural expectations. By contrast, *purpose* arises from creative dialogue related to “the possibility of transformation” (Hansen, 2008, p.23) or innovation in *Teacher Preparation*. In this way, meanings for the *purpose* of teacher preparation describe what is envisaged when creativity is applied to enduring questions of “what” may be done and “how” this may be achieved (Hansen, 2008, p.11).

Feiman-Nemsar (n.d, p.20; 1990) developed a framework for “conceptual orientations in teacher preparation” that has been considered “useful in providing insight into the diversity of what is valued in the preparation of beginning teachers” (O’Sullivan, 1996, p.318). The framework identified five orientations, namely *practical*, *academic*, *personal*, *technological*, and *critical*. Goals for teacher preparation described in these orientations were teachers with

- new ways of knowing, thinking, and creating meaning for a subject or discipline area;
- ability to manage the practical aspects of teaching such as dealing with ambiguity, uncertainty and dilemma;
- knowledge and skills informed by scientific principles and practices of teaching;

- maturity to effectively meet the needs and interests of their students rather than concerns for “self”; and
- commitment to a more democratic and just society with knowledge of both critical pedagogy and critical analysis.

More recently, Hansen (2008b) identified from research and extensive testimonials four purposes for teacher preparation. Each *purpose* was described in terms of prominent values. The four purposes described

- *preparation for productive life*: readying pre-service teachers for their future economic and social adult life;
- *academic learning*: empowering pre-service teachers to understand, explain, and appreciate, the significance of new academic knowledge so as to bring subject matter to life;
- *human development*: opportunity for pre-service teachers to learn, grow and make meaning; and
- *social justice*: equipping pre-service teachers to participate in societal transformation and rectify historic injustices.

In practice these four value-laden purposes “often overlap and even fuse” (Hansen, 2008b, p.13). This evidence suggests that *teacher preparation* involves multiple and overlapping purposes shaped by different values.

Functions for teacher preparation in changing times and places are recorded in historical accounts of teacher preparation. For example, histories of teacher preparation in New South Wales (Barcan, 1988) and Australia (Hyams, 1979) together with reports from National and State inquiries into teacher preparation (e.g., Quality Matters, 2000; Top of the Class, 2007) trace the evolution of *function* in teacher preparation. This evolution was dominated by issues of immediacy (provision of sufficient teachers for the nations schools), practicality (pursuit of quality; morale of teaching force) and expediency (funding and costs; supply and demand). Hyams (1979, p.136) concluded that in Australia “immediate gain took priority over the long-term benefit; practical concerns prevailed over consideration of theory; and the expedient of reducing costs was frequently the determinant when issues of importance were at stake.”

In summary, irrespective of whether the dialogue for teacher preparation is framed in functionalism or possibilities, or employs terms such as goals, purposes, or functions, there is evidence in the literature of diverse positions. This diversity has resulted in “significant disagreement among teacher educators, teachers, administrators, policy-makers, researchers and others regarding the purposes of teacher preparation” (Hansen, 2008, p.9).

### **Teacher and Teaching**

Multiple meanings for the *purpose* or *function* of teacher preparation were the first issue “untangled” from the teacher preparation literature. The second issue is closely inter-twined with the first, namely conceptions for *teacher* and *teaching*. Conceptions of “teacher” are central to “a judgement about what it is teachers must be prepared to do” (Darling-Hammond, 1999, p.14) and thereby interpretation of the activity or activities of teaching (Green, 1971).

Scholars have described *teacher* in multiple ways. Examples include intellectual leader (Feimer-Nemsar, n.d, 1990), reflective practitioner (Schön, 1987), clinician (Calderhead, 1995), artist (Delamont & Anderson, 1995), extended professional (Hoyle, 1995), researcher (Zeichner & Noffke, 2001), and executive (Fenstermacher & Soltis, 2004). Despite this diversity, there has been no attempt in the literature to reach consensus regarding a universal conception of *teacher*.

In the previous sub-section, Feiman-Nemsar’s (n.d, 1990) framework for “conceptual orientations in teacher preparation” was introduced in the context of defining different goals for teacher preparation. This framework shown in Table 2.1 also juxtaposes five orientations and goals in teacher preparation with associated conceptions for teacher, teaching and, learning. Five conceptions of teacher are described in Table 2.1, namely *teacher* as intellectual leader and subject specialist, skilful practitioner, knowledgeable, facilitator, educator, and political activist. Each conception of *teacher* is associated with different descriptors for *teaching*. For example, when the teacher is conceptualised as an “intellectual leader and subject specialist” teaching is envisaged as the transmission of new knowledge and development of understanding. In contrast, from the critical/social orientation, the *teacher* is envisaged as an educator and political activist promoting democratic values.

Table 2.1

*Conceptual Orientations in Teacher Preparation*

ORIENTATION	ARGUMENT	GOALS OF TEACHER PREPARATION
Academic	Teacher = intellectual leader, scholar, subject matter specialist. Teaching = transmission of knowledge and development of understanding. Learning to teach = academic scholarship	Acquiring new ways of knowing and thinking. Meaningful understanding of structures of the discipline and academic content.
Practical	Teacher = skilful practitioner Teaching = craft, artistry + technique Learning to teach = learning to manage ambiguity and uncertainty	Ability to manage practical dilemma of teaching based on reflection on first hand experiences.
Technical	Teacher = knowledgeable and skilful Teaching = applying the science of teaching and learning Learning to teach = application of the scientific principles and practices of teaching	Proficient or competent teachers with the technology of teaching as defined by teacher effectiveness research. Training models of teacher preparation.
Personal	Teacher = facilitator who knows students well. Teaching = meeting needs and interests of learners Learning to teach = using oneself effectively	Becoming a teacher who has transitioned from concerns of self-adequacy to more mature concerns about pupil and their learning' (Fuller & Brown, 1975).
Critical/social	Teacher = educator and political activist Teaching = promoting democratic values Learning to teach = knowledge of critical pedagogy and skills in critical analysis	Teachers committed to create a more just and democratic society.

Subsequently, Feiman-Nemser (2008) contributed a framework to describe learning-to-teach in terms of learning to *think, know, feel, and act* like a teacher. Together with description of these facets of learning, the framework includes descriptions of “how” this learning may be approached during teacher preparation. These approaches included descriptions for learning to

- *think* like a teacher: a “critical examination of one’s existing beliefs, a transition to pedagogical thinking, and the development of meta-cognitive awareness” (Feiman-Nemser, 2008, p.698);
- *know* like a teacher: an introduction to the depth and breadth of knowledge for teaching and of teaching (e.g., subject matter and how to teach it; how children grow and learn; curriculum; pedagogy; classroom organisation; and, assessment);
- *feel* like a teacher: opportunity to gain self-knowledge, dispositions, and professional identity; and
- *act* like a teacher: opportunity to learn “adaptive expertise” (Hatano & Oura, 2003) so as to “figure out what to do when” (Feiman-Nemser, 2008, p.699).

In summary, the idea of *teacher preparation* remains tightly intertwined with wider contestations related to conceptions of *teacher* and *teaching*. Whilst these conceptions provide a platform for robust debate and further research there is no consensus in the literature regarding the *function, purpose, or goals*, for *Teacher Preparation* nor conceptions of *teacher* and *teaching*. As will be discussed next, there is also “no consensus on the best way to prepare teachers” (Stuart & Tatto, 2000, p.511).

### **Research Studies Related to Preparedness to Teach**

Research related to *preparedness to teach* emerged following studies of Bandura’s (1986) notion of “perceived self-efficacy” and Ashton and Webb’s (1986) application to teaching of Bandura’s notion termed “personal teaching efficacy.” Essentially, these forms of efficacy referred to “judgement of one’s capacity to accomplish a certain level of performance” (Bandura, 1986, p.391). One such study found that elementary pre-service teachers had significantly greater “personal teaching efficacy” than their secondary counterparts (Gibson & Dembo, 1984).

Several researchers departed from measures of “personal teaching efficacy” to study student, novice and graduate teachers perceptions or self-reported *preparedness to teach* (e.g., Darling-Hammond, 2006; Housego, 1990, 1992; Zientek, 2007). Data for these studies were collected as measures for “feelings of preparedness to teach”

at different stages of teacher preparation. The purpose of these studies was to identify the effect, if any, of teacher preparation programs.

Housego (1990, p.40) speculated that student teachers' estimates of preparedness to teach were "self assessments of teaching competence". Yet a search of literature at that time yielded "nothing about student teachers' feelings of preparedness to teach and very little on confidence in ability to teach" (Housego, 1990, p.38). To explore this possibility, Housego (1990) investigated pre-service elementary teachers' perceptions of preparedness to teach in a newly revised, one-year teacher education program at the University of Columbia. A researcher-developed instrument was designed to measure the degree to which student teachers felt prepared to perform a set of tasks specified in a core unit of study. The instrument named the *Student Teachers' Feelings of Preparedness to Teach Scale* employed a five-point Likert scale anchored by "very well prepared" and "very poorly prepared".

Findings from Housego's (1990) study suggest that student teachers' feelings of preparedness to teach grew incrementally during their teacher education year of study. In some aspects of teaching (instructional planning) there were greater increases in perceptions of preparedness than other aspects (questioning). Subgroups initially felt more prepared to teach than others most probably because of prior experiences of teaching. A subsequent study by Housego (1992) found that feelings of preparedness increased in the first three terms of teacher preparation but did not increase in the fourth and final term.

Two later studies confirm a positive effect of teacher preparation on measures for perceptions of preparedness to teach. Darling-Hammond (2006) found that 80% of pre-service secondary and elementary school teachers felt prepared to teach following completion of the twelve-month post-graduate Stanford Teacher Education Program. Zientek (2007) collected data using survey items employing a six-point Likert scale to find that traditionally certified teachers felt better prepared than teachers prepared by non-traditional routes.

Studies conducted more broadly to investigate the effect of teacher preparation have resulted in mixed claims. There is evidence that value is added by teacher preparation (Adams & Krockover, 1997; Ferguson & Womack, 1993; Gess-Newsome & Lederman, 1993; Grossman & Richert, 1988; Grossman, Valencia,

Evans, Thompson, Martin & Place, 2000; Guyton & Farokhi, 1987; Hollingsworth, 1989; Monk, 1994; Valli & Agostinelli, 1993). However, Wilson and Tamir (2008, p. 920) claim “research offers few definitive conclusions about the effects of teacher preparation” (Allen, 2003; Cochran-Smith & Zeichner, 2005; Wilson & Floden, 2002; Wilson et al., 2001).

Studies of subject matter preparation suggest that “Contrary to the belief that more is better, when it comes to subject matter courses, one study found that subject matter study beyond four to six courses had little effect on (school) student achievement” (Wilson et al., 2002, p.129). Calls for further research in this regard was an antecedent for this study.

In summary, this section related to the idea of *Teacher Preparation* has found

- *teacher preparation* is a continually evolving idea rather than a defined and coherent discipline or research area;
- teacher preparation research is limited and is in its “infancy;”
- no consensus in the literature as to “the best way to prepare teachers” (Stuart, & Tatto, 2000, p.511) nor the goals and purposes for teacher preparation (Hansen, 2008);
- diverse conceptions of teacher preparation intertwined with diversity in conceptions for “teacher” and “teaching;”
- evidence in early studies (Housego, 1990; 1992) of a teacher preparation effect whereby feelings of preparedness to teach increase with course progression. Subsequent studies have resulted in inconsistent findings; and
- tentative evidence for a “ceiling” for improvements in feelings of preparedness to teach as pre-service teachers progress in their teacher preparation program (e.g., Housego, 1992).

Overall, these findings describe a context of uncertainty, inconsistency and diversity of ideas. This context forms the backdrop for the further review of different aspects of teacher preparation. The first aspect is *University-based Teacher Education*.

## UNIVERSITY-BASED TEACHER EDUCATION

It has been established that diverse views surround the idea of *Teacher Preparation*. This is also the case for *University-based Teacher Education*. According to Villegas-Reimers (2003, p.42) teacher education “varies dramatically from country to country,” has received “strong criticism everywhere,” and undergoes rapid and frequent change. Points of view range from statements that “teacher education matters” (Darling-Hammond, 2000) to claims that “Teacher education remains a non-essential but potentially useful exercise that can contribute to the education of some teachers, at some times, and for some purposes” (Hess, 2008, p.1328).

Four dominant themes were identified in *Teacher Education* literature relevant to this study. These themes related to understandings for university-based teacher education from a *Historical Context* and *Teacher Education Research* together with ideas for *Purposes* and *Learning-to-teach*.

### Historical Context

Despite the fact that “Teacher education was at the core of the original form of the university that emerged in medieval Europe” (Labaree, 2008 p.290), commentary from Western countries (Dyson, 2005) including the United States (Labaree, 2008) and Australia (Hyman, 1980) portray a journey of *Teacher Education* “moving into” universities as opposed to evolving from within. According to Labaree (2000) universities offered the field of *Teacher Education* status and academic credibility whilst *Teacher Education* offered universities students and social utility. Despite advantages for both parties, the development of university-based teacher education has neither been “smooth or unproblematic” nor “easy” (Labaree, 2008).

More contemporary histories of teacher education portray “tidal shifts” with the movement of *Teacher Education* “in” and “out” of universities as settings for teacher education and preparation. Houston (2008, p.388) defined *settings* as “the totality of the places, people and programs” including such variables as resources, the conceptual frameworks underpinning programs and admission criteria for prospective teachers. Examples for the “tide moving out” are the United States with attempts to reconnect teacher education to schools and classrooms (Stuart et al., 2000) and the United Kingdom with a shift from higher education institution-based teacher preparation to school-based “training-on-the-job” apprenticeship (Dyson,

2005; Korthagen, 1999). An example of the “tide moving in” to university settings is Australia with preference for a tertiary education model. Examples from different countries are manifestations of a “vigorously debated issue” (Zeichner, 2008, p.263) regarding the role of various settings for the preparation and education of teachers.

The historical framework of Cochran-Smith and Fries (2008) describes how teacher education has been constructed and studied. The framework portrays the dominant discourse of the time as four “problem” frames, namely

- *curriculum* (systemising and standardizing curriculum);
- *training* (identifying transportable training strategies);
- *learning* (understanding how teachers learn); and
- *policy* (identifying cost-effective, outcomes focussed policies).

All four “problem” frames described by Cochran-Smith and Fries (2008) are recognisable in Hyman’s (1980) historical account of teacher preparation in Australia “moving into” universities. This history traces teacher preparation from its origins in the first formalised system of teacher education in Model schools in the early 1850’s to the introduction of Teachers’ Colleges then Colleges of Advanced Education then Universities. At present, the preferred setting to prepare teachers for their work is universities with the ideal of preparing “the educated, competent professional” (Knight, Lingard & Bartlett, 1994, p.464) capable of moral discernment (Dyson, 2005, p.51).

In summary, the idea of *Teacher Preparation as University-based Teacher Education* is “intertwined” with discussions related to the “best” setting or settings to prepare teachers for their work. History provides evidence of “tidal shifts” as teacher education moves out, in and between university, colleges and schools.

### **Teacher Education Research**

Teacher education research is characterised by a “plurality of approaches” (Borko, Whitcomb & Byrnes, 2008, p.1017) that have been classified into four genre. These approaches include

- *effects of teacher education research*: a search to identify stable propositions that apply to multiple situations;

- *interpretive research*: a search for local meanings (Bogdan & Biklen, 1992; Erickson, 1986; Hatch, 2002; Lincoln & Guba, 1985; Schwandt, 1994) of a specific context, preserving its complexity, communicating the perspectives of participants, and transferring findings to comparable teacher populations and contexts;
- *practitioner research*: teacher educators' disciplined and systematic inquiry into their own practices *in situ* and from the perspective of participants; and
- *design research*: a desire to simultaneously improve practice and contribute to theory by creating models of successful innovations, developing explanatory frameworks for the processes of learning, and tools designed to foster learning (Cobb, Confrey, diSessa, Lehrer, & Schauble 2003).

In concert, this research has provided an understanding of and appreciation for the complexity of teaching and learning-to-teach (Borko, Whitcomb & Byrnes, 2008). The goal for future research, it seems, is to “tease out that complexity” (Borko et al., 2008, p.1038) to find critical links in the “chain of evidence” (Cochran-Smith, 2005, p.303) between teacher preparation and “what matters.” For example, links with the purposes for school education such as pupil learning. To progress in this direction, Borko et al., (2008, p.1038) recommend that future research “be multidisciplinary and pluralistic in its methods and must take advantage of new tools for data collection and analysis.”

As was the case with *Teacher Preparation*, teacher education research is “not yet a mature field” (Borko et al., 2008, p.1017). Arguably, “Some of what are considered serious failings in the research on teacher education are more rightly understood as reflections on the field’s relative youth” (Cochran-Smith & Fries, 2008, p.1087). Accordingly, many unanswered questions surround the idea of *University-based Teacher Education*.

### **Purpose**

One question of *University-based Teacher Education as a form of teacher preparation* relates to *Purpose*. To re-iterate, consideration of *purpose or purposes* is framed in Emmet’s (1958) notion of creative possibilities. A dominant theme in the literature of *university-based teacher education* is the challenge of finding a

balance between academic and professional missions (Zeichner, 2008) whilst still attending to pragmatic considerations.

Moving teacher preparation “into” universities was and still is intertwined with debates concerning the professionalization of teaching. In this context, Sockett (2008) juxtaposed the service of the profession with the knowledge base of the profession to describe the moral and epistemological purposes for *teacher education*. Sockett’s (2008) model proposes four types of professional, namely the

- *Scholar-professional*: knowledge is the purpose of education; the service of the teacher is to impart wisdom and foster the life of the mind (Barzun, 1991; Hirst 1972; Oakeshott, 1967; 1975). Becoming a scholar-professional involves immersion in controversy and uncertainty including disputes about the central characteristics of the discipline, disagreement about the merits of different topics to be taught and struggles about the distinctive discipline being a source of scholarly knowledge;
- *Nurturer-professional*: development of the individual is the purpose of education; the service of the teacher is on individual nurture and relation between child and teacher; focus on self-understandings. According to Noddings (1984) the nurturer-professional embraces intellectual life “to move beyond the bureaucratic and technical framework of modern schooling, and places the desirability of relationship in the epistemic context” (Sockett, 2008 p.53). This model prescribes teacher education curricula which integrate discipline and pedagogy;
- *Clinician-professional*: socialisation is the purpose of education; the service of teacher is teacher’s adaptive expertise. Knowledge base for professional practice is researched and codified and standards for professional work prescribed. The clinician reflectively uses research-based knowledge to inform developmentally appropriate practice; and
- *Moral agent-professional*: virtue is the purpose of education; integrating academic content with intellectual and moral virtues. Teacher education centres on the process of self-discovery as a teacher forming an identity based on personal virtues (e.g., dispositions of character such as care, sincerity, empathy, perseverance, courage) rather than adherence to professional norms.

In summary, situating teacher preparation in universities has added to the complexity that surrounds debates and contestation related to *Teacher Education*. As illustrated by Sockett's (2008) model, the professionalization of teaching has created at least four additional conceptions for teacher, teaching, and learning-to-teach that have increased the complexity of researching teacher education.

### **Learning-to-teach**

Teacher education research has contributed to opportunity to create new meaning for *learning-to-teach*. In the United States, for example, discussion has centred on the nature of teaching and what knowledge and skills teachers require in order to teach well (Cochran-Smith & Demers, 2008). Research oriented to these discussions was made possible through developments in cognitive science. These developments enabled a shift from research of observable teacher behaviours to teachers' knowledge, learning, thinking, and ideas. Essentially, "Researchers explored how teachers' attitudes, beliefs and values changed (or not) over time" (Cochran-Smith & Demers, 2008, p.1010). Research output for teachers *Beliefs*, *Attitudes*, and *Knowledge* informing this study are presented next.

#### ***Beliefs***

Despite conceptual, theoretical and methodological barriers to contemporary understanding of pre-service teachers' beliefs, research interest has been shown for belief structures of teachers (Calderhead, 1996) and teachers' beliefs (Tsangaridou, 2006) as a means of better understanding teacher learning (Borko & Putman, 1996), teacher behaviours (Richardson, 1996), good teaching (Rovengo, 2003) and improving teacher education programs (O'Sullivan, 2000).

In the teacher education literature, teachers' beliefs about teaching are attributed to the influence of personal experience, experience with schooling and instruction and experience with formal knowledge (Richardson, 1996). A meta-analysis by Wideen, Mayer-Smith, and Moon (1998) of 93 empirical studies published after 1990 on the topic of learning to teach revealed that beginning teachers enter pre-service teacher education with firmly held views about teaching. Further that these beliefs are rarely influenced by the interventions that occur during pre-service teacher education.

Several studies including those of Fang (1996), O’Sullivan (2005), Pajares (1992) and Richardson (1996) confirm teachers’ beliefs may be acquired and formed from three categories of experience. According to Tsangaridou (2006, p.487) these categories include experiences as pupils in schools, life experiences, and/or, teacher education professional preparation program experiences.

In order to make changes to these beliefs, several scholars (Calderhead, 1996; O’Sullivan, 2005; Pajares, 1992; Richardson, 1996; Schön, 1983, 1987) have suggested that life and personal school experiences “must be brought to light, discussed, tested, and reframed during professional preparation programs” (Tsangaridou, 2006, p.487).

### ***Attitude***

“The teacher attitude research of the mid-century attempted to develop predictive understandings of the relationship between teacher attitudes and behaviours so that attitude inventories could be used in the selection of teachers” (Richardson 1996, p.107). During this period, attitude was defined as “a mental and neural state of readiness, organised through experience, exerting directive or dynamic influence upon the individual's response to all objects and situations with which it is related” (Allport, 1967, p.8). Many studies intended to find attitudes (cause) that would predict classroom behaviours (effect) that may serve to guide decisions related to entrance into the teaching profession (Richardson, 1996). Inherent in this argument is the idea that attitude may be an indicator of the future effectiveness of a teacher.

### ***Knowledge***

Borko and Putman’s (1996) meta-analysis of 190 empirical studies identified how knowledge and beliefs change over time as novice teachers learn to teach. As reported by Cochrane-Smith and Fries (2008, p.1059) this analysis revealed (amongst other things) that

- learning to teach is influenced by a complex array of factors;
- prospective teachers’ knowledge and beliefs pertaining to teaching, learning, and learners, are shaped by years of their own school experience and can be highly resistant to change;

- following focused and sustained instruction pre-service teachers can develop richer and more powerful understandings of subject matter content and transform their beliefs about the nature of subjects that they teach; and
- teachers can learn to teach in new ways, but they require considerable and sustained support to do so.

Shulman's (1987) framework claims to describe the minimum knowledge for teaching using seven categories. Knowledge categories include

- *content knowledge*: knowing which are important concepts and skills in the subject (substantive) and knowing how concepts and skills are structured and organised within the subject (syntactic);
- *general pedagogical knowledge*: broad principles and strategies of classroom management and organization which apply irrespective of the subject to be taught;
- *curriculum knowledge*: teaching materials and programmes;
- *pedagogical content knowledge* (PCK): the knowledge base for selecting, organizing, and presenting content so content is instructional. Grossman (1990) identified four components of PDK, namely knowledge and beliefs about the purposes of teaching a subject at different stages (grades, levels) of schooling; knowledge of pupils' understanding, conceptions and misconceptions of subject matter; knowledge of curriculum materials available for teaching the subject together with knowledge of horizontal and vertical curricula for the subject; and knowledge of instructional strategies and representations for teaching particular topics in the subject;
- *knowledge of learners*: characteristics of learners including knowledge of child development and knowledge of particular groups of learners (e.g. age or stage of schooling);
- *knowledge of educational contexts*: localised knowledge of school, district, and community; and
- *knowledge of educational ends, purposes, values and philosophical/historical influences*: short and long term goals of the subject and of education.

In summary, the research base for *learning-to-teach* has been advantaged by developments in cognitive science. These developments have enabled research with a focus on teacher attitudes, beliefs, values and knowledge.

Overall, this section of the review pertaining to *Teacher Education* has highlighted four key points. Firstly, a challenge for university-based teacher education is finding a balance between academic and professional missions (Zeichner, 2008). Secondly, these missions present different moral and epistemological purposes (Sockett, 2008) manifest as four conceptions of the professional teacher, namely *scholar-professional*, *nurturer professional*; *clinician-professional* and *moral agent-professional*. Thirdly, teacher education research is “youthful” (Cochran-Smith & Fries, 2008) and adopts a “plurality of approaches” (Borko et al., 2008). Finally studies of teachers’ attitudes, beliefs, values and knowledge has revealed the importance of pre-service teachers’ life experience, personal school experience and experience of teacher education when learning-to-teach.

### PRIMARY SCHOOL TEACHER EDUCATION

The focus of this section is one area of university-based teacher education termed *Primary School Teacher Education* or Elementary School Teacher Education. Traditionally, primary or elementary school teacher education have prepared pre-service teachers for teaching Kindergarten through to Year 6 or grades one through six.

Ishler, Edens and Berry (1996, p.350) describe a symbiotic relationship between teacher education curriculum and elementary school curriculum in the United States. This relationship is equally applicable elsewhere in terms of the way nations, states or districts organise content, process and functions for schooling. Accordingly, conceptions of primary school teacher education are necessarily intertwined with issues of “the educating we expect our schools to do” (Goodlad, 1990).

According to Wright (2002, p.38) “The value of primary education lies in the same teacher delivering the curriculum as a whole, making links between different aspects of the curriculum and in knowing children as individuals, with their individual needs.” From this conception of teaching, the “best” teacher of any subject is the class teacher because of the nature of the learning relationship

established with the student (Jones, 1992) and the opportunity afforded the teacher to maximise cross-curricular learning. This assumption has been challenged in Australian contexts where current practice includes recruitment of subject specialists for primary schools (e.g., Angus, Olney & Ainley, 2007; Ardzejewska, McMaugh & Coutts, 2010).

Four themes specific to elementary education were described by Ishler et al., (1996) and resonate with contemporary debate pertaining to *Primary School Teacher Education*. These themes include: tensions between proponents of the liberal arts and proponents of professional preparation (subject-matter concentration); contestation concerning the knowledge base and competencies needed to teach and therefore the duration of the teacher education program; debates related to the generalist tradition whereby elementary/primary teachers must teach numerous subjects; and the relative value of an apprenticeship to teaching by observation that may be integrated into a teacher education program.

### **Historical Perspectives**

Historically, “recommendations about the appropriate curriculum for preservice elementary education teachers have reverberated during this century and curricular innovation is not a novel idea” (Ishler et al., 1996, p.354). Critics of these innovations have suggested that higher education institutions have “prepared teachers for schools that don’t exist” (Ishler et al., 1996, p.368). Innovative classrooms, team teaching, individually guided education, reflective teaching and other modern practices emphasised during teacher education have been “ahead of their time.” Consequently, graduates with innovative ideas soon become socialised into traditional school cultures such as self-contained classrooms and traditional practices.

Historical evidence describes struggles with different portrayals of the primary school (elementary) teacher and forms of teacher preparation. In Australia for example, the first teachers of primary school-aged children were woman with no teacher preparation (Kyle, 1986). These women were deemed appropriate to provide children of the early colonies with pastoral care and opportunity to learn skills they themselves learnt at schools in England. The first primary school teacher was conceptualised as “lay-teacher-nurturer”.

The advent of the model school in New South Wales in the 1820's provided on-the-job training for "pupil teachers." These pupils were older students who were deemed appropriate and competent to teach younger students. The introduction by a one-year formal preparation program in 1920 was replaced in the post war period (1945-60) by "teacher training" in State funded Teachers' Colleges, and later, in Colleges of Advanced Education. A binary system of Colleges and Universities introduced in 1987 heralded the beginning of a national system of tertiary education. Despite recognition that primary teachers required "training and education" there remained "the need to clarify who we are as a profession" (Gore, 1995, p.9).

The literature has a paucity of conceptual frameworks to describe the *primary school teacher*. One notable exception is an opinion piece by Alexander, Rose and Woodland (1992) that proposed a typology for the *Primary Teacher*. This typology included descriptions for the

- *Generalist* – teaches most, or all of the curriculum; specialize in age range rather than subject; do not profess to specialist subject knowledge;
- *Generalist/Consultant* – combines a generalist role with subject expertise used for consultancy roles such as developing subject-specific school policy, subject co-ordination, staff guidance and support, resource organisation, monitoring and evaluation;
- *Semi-specialist* – teaches subject of greatest expertise with additional roles as a generalist or consultant; and
- *Specialist* – teaches subject of greatest expertise full time.

This typology was included in a discussion paper, commissioned by the British Government to address concerns for an acute shortage of subject expertise in British primary schools. This shortage of expertise was exacerbated by the introduction of a National Curriculum that changed community expectations and perceptions for subject teaching and teacher subject expertise.

To stimulate discussion, Alexander et al., (1992, para 146) proposed that teaching roles in British primary schools had "been too rigidly conceived and that much greater flexibility is now needed." The authors recommended that schools formulate

a combination of teaching roles based on firstly, meeting pupil's needs and, secondly, drawing on the professional strengths of staff. Strengths of staff were identified as "subject knowledge" and "expertise in respect of specific age groups or pupils" (para 147).

In summary, the history of ideas and settings for teacher preparation in Australia established a generalist teacher tradition for most primary schools in NSW. The perpetuation of this tradition was not due to a lack of alternative possibilities. Based on historical evidence this perpetuation was more likely due to pragmatic considerations dominated by issues of immediacy, practicality and expediency (Hyams, 1979). Political considerations such as demonstrating immediate gain for teacher preparation investment and reducing costs have been identified as major contributors to the type of primary school teacher that evolved in NSW.

Overall, *Primary School Teacher Education* has been shaped by political decisions and judgements about "who teaches what" and the attributes and competencies required of this role. It has been argued that the evolution of the idea of the generalist or classroom teacher has more to do with matters of immediacy than educational imperatives. Notwithstanding this suggestion, the outcome is the need for providers of *Teacher Education* to design programs of *Primary School Teacher Education* to prepare graduates capable of teaching all areas of the primary school curriculum.

### **PHYSICAL EDUCATION TEACHER EDUCATION (PETE)**

This section of the review presents two issues related to the preparation of specialist teachers of school Physical Education. These issues include ideas for *Purpose* and conceptions of *Teacher and Teaching* underpinning programs for *Physical Education Teacher Education (PETE)*.

#### **Purposes**

Evidence has been provided in this review to support the claim that different purposes support ideas for *Teacher Preparation* and *Teacher Education*. Different orientations to teacher preparation and education generally (e.g. Doyle, 1990; Feiman-Nemser, 1991; Zeichner, 1983) have also been influential in *Physical Education Teacher Education*. Two frameworks by Crum (1992; 1994) and Rink

(1993) illustrate how *Physical Education Teacher Education* programs can support different conceptions of “Physical Education.”

Crum (1992, 1994) studied PETE programmes in European countries to identify five major conceptual orientations to Physical Education. These concepts and associated orientations included the

- *biological oriented training-of-the-physical*: supporting training of anatomical or physiological variables;
- *pedagogical education-through-movement*: promoting personal development;
- *personalist movement education*: developing personal movement competency and identity;
- *conformist socialisation*: supporting character building through physical fitness, together with technical and tactical capability; and
- *critical-constructive movement socialisation*: "objectives are formulated in terms of techno-motor, socio-motor and reflective competences that are needed for a personal and social satisfying, life-long participation in movement culture" (Crum, 1994, p.527).

Adopting the teacher education framework of Feiman-Nemser (n.d, 1991), Rink (1993) analysed *Physical Education Teacher Education (PETE)* to locate four orientations. These orientations and their foci include the

- *academic*: the subject matter of games, sport, dance and fitness;
- *technological*: teachers skills identified through teacher effectiveness research;
- *personal*: personal meaning for personal growth of a teacher; and
- *critical/social*: the moral basis of teaching including issues of equity and social justice.

In order to consider different orientations within PETE, Tinning (2006) mapped his analysis to Zeichner’s (1983) framework. Tinning’s (2006) description included four orienting perspective for PETE programs with two possible new orientations. These orientations were termed

- *traditional/craft*: modelling of co-operating or supervisory teachers' practice in "the field;"
- *behaviouristic*: developing specific, observable teaching skills known to be associated with pupil learning and derived from teacher effectiveness research;
- *personalistic*: development of the self is the key to competent teaching;
- *critical*: as all education is ideological, teachers need to understand the socially constructed nature of schooling and challenge taken-for-granted assumptions;
- *academic*: a subject-centred model of teacher education for Physical Education; and
- *reflective*: developing teachers who are reflexive.

In summary, there is evidence that different purposes underpin *Physical Education Teacher Education*. Accordingly, programs designed to prepare or educate specialist Physical Education teachers may be understood as part of what Hansen (2008) portrayed as a creative dialogue of possibilities and innovation.

### **Research Studies Related to Physical Education Teachers**

Research of pre-service and in-service Physical Education specialist teachers has contributed to a greater understanding of learning-to-teach school Physical Education. Studies that constitute some of this research-base relate to teachers attitudes and beliefs together with description of four categories of teacher and their teaching.

#### ***Attitudes***

Attitudes became more positive for pre-service teachers across years of PETE suggesting the "PETE of teachers has some effect on attitudes about teaching PE" (Morgan, 2008, p.51) and assist the "development of higher opinions concerning the value of PE in the primary curriculum" (p.52).

#### ***Beliefs***

Research on teachers' beliefs is still in its infancy (Fang, 1996; O'Sullivan, 2005; Tsangaridou, 2006). According to Tsangaridou (2006, p.498) in physical education this research is "inadequate to inform educational improvement until conditions

under which beliefs are created and changed over time are better understood.” Challenges for future research include definition of “beliefs” together with a lack of diversity of methodologies and theoretical frameworks (Tsangaridou, 2006).

Lortie (1975) suggested pre-service teachers enter teacher education with well-established beliefs regarding teaching which are difficult to change. Physical education research based on this finding was oriented to identification of the broad spectrum of beliefs that pre-service teachers bring to teacher education programs and how these change over time (Graber, 2001; O’Sullivan, 2005, Stroot, 1996). Other studies of the impact of teacher education programs on pre-service teachers’ beliefs include investigations of the purposes of physical education (Placek, Dodds, Doolittle, Portman, Ratcliffe & Pinkham, 1995), role of the physical education teacher (Griffin & Coombs, 2000; O’Byrant, O’Sullivan & Raudesky, 2000), good teaching in PE (Doolittle, Dodds & Placek, 1993), subject matter in PE (Green, 2000), learners in PE (Woods, Goc Carp, Escamilla, 2000) and student learning in PE (Tsangaridou & O’Sullivan, 2003).

### *Effective teachers*

Compared to research with a focus on other school subjects, Physical Education was “a later arrival on the teacher effectiveness scene” (Hickson & Fishburne, 2004, p.4; Mawer, 1995). Initially, studies in Physical Education focused on teacher’s self-perceptions of effectiveness. Notable from this research were findings that few teacher-based determinations of effectiveness included student learning as a goal (Fishburne & Borys, 1987; Schempp, 1983, 1985). For example, a study of teachers and pre-service teachers by Placek (1982, 1983) found that effective PE teaching was often defined when school-aged children were participating (busy), with minimal misbehaviour (good) and finding the activities enjoyable (fun). The notion of “busy, good, and fun” was concerning for advocates of Physical Education as it positioned student learning as a low priority.

A review of research on effective teaching of Physical Education (Rink, 1993) identified seven teacher characteristics associated with effective instruction. These characteristics were

- identification of intended outcomes for learning;
- planning learning experiences to realise these outcomes;

- clear presentation of tasks;
- organisation and management of the learning environment;
- monitoring of the environment;
- development of lesson content based on student responses; and
- evaluation of the effectiveness of instructional/curricular process.

Framing notions of “effective teaching in PE” (Hickson, 2003) within Rink’s findings were considered as a means to identify the “ultimate programmatic goal” (Wiegand, Bulger & Mohr, 2004) for *Physical Education Teacher Education*. This idea may be equally valued or contested by teachers, teacher educators and educational authorities.

### ***Reflective teachers***

Based in the work of Schön (1983), *reflective teachers* gain knowledge through experience and reconstructing that experience. Typically, these teachers exhibit higher order thinking skills and reasoning. Reflective teachers employ these traits to examine views and beliefs of others and self, and thereby, manage the complex nature of teaching and learning.

*Physical Education Teacher Education* literature includes a reflective framework for teaching in PE offered by Tsangaridou and O’Sullivan (1994). The framework differentiates three foci of teaching associated with three different levels of reflection. These foci include

- instructional or managerial aspects of teaching (*technical reflection*);
- contextual issues of teaching (*situational reflection*); and
- social, moral, ethical or political aspects of teaching (*sensitizing reflection*).

Technical, situational and sensitizing reflection may be further differentiated by description, justification and critique. According to this classification, a pre-service teacher engaging in reflection of various aspects involved in teaching may provide: descriptive information of an action; the rationale or logic for an action; and, critique in the form of explanation and evaluation (Behets & Vergauwen, 2006).

### ***Teachers with sociological imagination***

Giddens (1994, p.18) contributed the notion of teachers with *sociological imagination*. Such teachers are “able to ‘think ourselves away’ from the familiar routines of our daily lives in order to look at them anew.” Referring specifically to teacher education for health and physical education, Tinning (2004, p.250) contends that the most important attribute that students may acquire is “the way of thinking about education, health, physical education, and the work of contemporary schooling.” In the context of teachers with sociological imagination, this attribute would also require “thinking oneself away” from contemporary routines of primary school Physical Education. Given the marginalised status of PE in primary schools this cognitive process may be particularly pertinent.

From the perspective of *teacher with sociological imagination*, PETE should ideally provide pre-service teachers with an opportunity to acquire new “ways of thinking” about physical education and the work of contemporary primary schooling.

Indeed, one of the aspirations of the sociology of physical education is the investigation of the changing forms and definitions of physical education, of what is to count as valid physical education and why, at any given time.” (Evans & Davies, 2006, p.114)

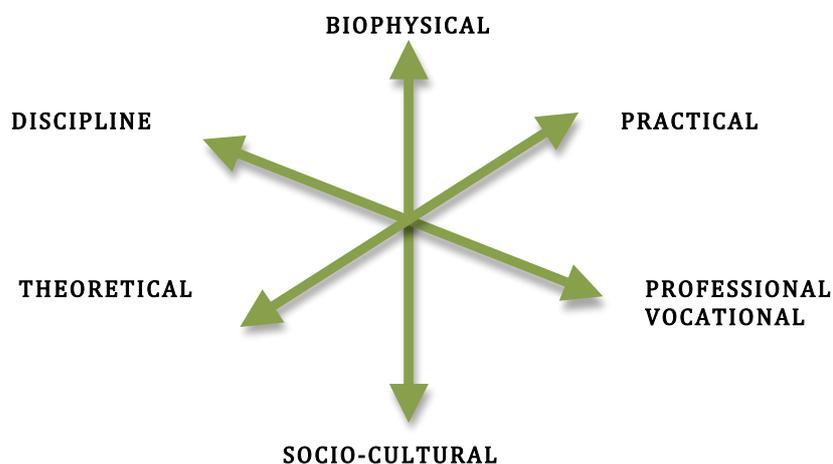
Arguably, one possible outcome of *Physical Education Teacher Education* may be a sociologically imaginative teacher. These teachers may be able to reject conceptions of Physical Education founded on personal school experience in favour of new conceptions based on stronger educational imperatives.

### ***Knowledgeable teachers***

According to Tsangaridou (2006), teacher educators and researchers of teaching are just beginning to understand the nature and development of teachers’ knowledge (Calderhead, 1996; Munby, et al., 2001; Richardson, 1996; Rovegno, 2003; Wilson & Berne, 1999). These broader understandings have not only increased the scope of the debate pertaining to the forms of knowledge required of *knowledgeable teachers* (Rossi & Cassidy, 1999) but also brought into question the combination of knowledge’s that may underpin teacher preparation.

Dichotomies between different forms of knowledge in *Physical Education Teacher Education* are shown in Figure 2.2. According to Kirk, Macdonald and Tinning (1997) tensions exist between:

- discipline knowledge and professional/vocational knowledge;
- practical and theoretical knowledge; and,
- biophysical knowledge (e.g. functional anatomy, biomechanics, exercise physiology, motor learning) and, socio-cultural knowledge (e.g. sociology, history, philosophy).



*Figure 2.2: Elements of instructional discourse of the physical activity field in Australian higher education (Kirk, Macdonald & Tinning, 1999, p.278)*

Different forms of knowledge represented in Figure 2.2 together with tensions between them, illustrates some of the challenges when defining the outcome of *Physical Education Teacher Education* in terms of *knowledgeable teachers*. Further, this schema introduces difficulties when defining the boundaries of different forms of tertiary Physical Education, namely PETE, *Primary School Teacher Education-Physical Education* and Sports Sciences.

In PETE literature, *knowledgeable teachers* are portrayed as capable of adopting a pupil-centred rather than subject-centred approach so as to “place pupils learning at the heart of teaching” (Capel, 2007, p.501). This approach is achieved by clearly understanding the aims and purpose of their subject and being able to plan content and teaching approaches to ensure pupil learning (Capel, 2007; Rossi & Cassidy,

1999). According to Rossi and Cassidy (1999) such teachers have developed cognitive capacities required to situate student learning at the centre of all priorities, clearly articulating the aims and purposes for PE, attend to matters of why they are teaching specific content, plan content and teaching approach to achieve the aim and, challenge the status quo in order to make Physical Education as a subject more relevant for their students (Capel & Blair, 2007, p.23).

More recently, Capel and Blair (2007, p.23) have identified a change of focus in initial teacher education programs to “developing knowledgeable teachers of physical education able to make change.” Capel (2007, p.501) argues that “if the focus of teacher training is on developing knowledgeable teachers, rather than on developing knowledge to teach, there is greater likelihood of trainee teachers being better prepared to challenge the *status quo*”. If this is to be achieved, pre-service teachers must learn to critically evaluate: conventions, routines, their own and others’ practices, curriculum content, and teaching approach (Rossi & Cassidy, 1999).

Overall, evidence presented in this section suggests that *Physical Education Teacher Education* has been underpinned by different conceptual orientations. These orientations are characterised by different purposes for teacher preparation together with different conceptions for the Physical Education specialist teacher and their teaching. Consequently, aims for PETE programs may cover the scope of modelling the traditions and craft of service teachers, developing specific teaching skills, developing self-as-teacher, critiquing existing practices, advancing the subject or being reflexive. Such purposes are manifest in the preparation of teachers termed *effective, reflective, with sociological imagination or knowledgeable*.

## **PRIMARY SCHOOL TEACHER EDUCATION PHYSICAL EDUCATION**

### **(PSTE-PE)**

Internationally, it is *generalist* primary school teachers who are predominantly responsible for the delivery of Physical Education in schools (Hardman, 2008; Hardman & Marshall, 2000). Countries identified in the literature with a generalist teacher model include the United States of America (Graber, Locke, Lambdin, Solmon, 2008), Britain (Chedzoy, 2000) together with Australia, Canada, Ireland and New Zealand (Petrie, 2010). In Australia, the teaching of Physical Education by

classroom teachers may be supplemented by specialists and outside providers (Ardzejewski, 2006; Morgan & Hansen, 2007a). However, the responsibility for delivery of PE resides predominantly with *generalist* teachers. Several authors agree that this trend is not expected to change (Locke & Graber, 2008; Morgan & Hansen, 2007; National Association for Sport and Physical Education, 2004).

Two enduring themes found in the literature of *Primary School Teacher Education-Physical Education* teacher education are the *Purpose* of primary school Physical Education and *Research* to inform “what” teachers need to be able to know, do and feel in order to deliver “quality” Physical Education in primary schools.

### **Purpose**

Motor skills, health and fitness, social processes and cognitive change have been identified as common themes when describing purposes for primary or elementary school Physical Education (lisahunter, 2006). Benefits for primary (elementary) school physical education include “health, fitness, exercise, social interaction, motor development, skill development and more” (lisahunter, 2006, p.580). Difficulty accessing teachers’ programs has provided a challenge to Australian research of the purpose and benefits of primary school Physical Education. In part, this challenge may be attributed to minimal accountability for curriculum implementation in Australia that has created a paucity of program documentation. Paradoxically, the same system of accountability has supported program diversity (lisahunter, 2006, p.586).

Three themes dominate international studies of the ability of generalist to deliver “quality” primary school or elementary school Physical Education (Petrie, 2010). The first theme confirms that generalists bring to their practice negative attitudes towards PE associated with personal experiences of school PE and Sport (Howarth, 1987, Morgan & Bourke, 2005; Morgan, Bourke & Thompson, 2001). This leads to reported preferences to teach other areas of primary school curriculum (Faucette, Nugent, Sallis & McKenzie, 2002; Morgan & Bourke, 2004). The second theme is a lack of PE content knowledge among primary school generalist teachers that typically leads to uncertainty related to what they are teaching (DeCorby, Halas, Dixon, Wintrup & Janzen, 2005). The final theme relates to reports of generalist

teachers reduced level of confidence and motivation to teach PE (Faucette et al., 2002; Morgan & Bourke, 2004).

### **Teacher Attitudes**

Teachers' attitudes (Smith, 1993) and attitudinal dispositions have long been considered important when developing programs of physical education teacher education courses (Portman, 1996). Early research found a chain of evidence linking teacher's affective disposition, school student's attitude to physical education (Aicinena, 1991), and experience of physical education (Carlson, 1995; Lawson, 1983c; Williams, 1989).

The literature yields a general consensus that many non-specialist teachers hold negative attitudes toward physical education (Andrews, 1987; Brumbaugh, 1987; Faucette & Patterson, 1989; Howarth, 1987; Lawson, Lawson & Stevens, 1982; Portman, 1996; Smith 1993; Xiang, Lowy & McBride, 2002), often formed from their personal school experiences of PE and Sport (Howarth, 1987; Morgan & Bourke, 2005; Morgan et al., 2001). Further, these attitudes need to be addressed during initial teacher education to bring about positive change in the generalist teacher's ability to deliver "quality" Physical Education.

Research has established the positive effect of tertiary training on pre-service teachers' attitudes to physical activity (Howarth, 1987), physical education (Barrell & Holt, 1982) and movement education (Dansby, 2000). Albeit that these positive effects may be "left behind" by beginning teachers (Etheridge, 1989) and beginning physical education teachers (Stroot, Faucette, & Schwagar, 1993) as they are socialised into the teaching profession.

To focus more specifically on the population group represented in this current study, the next section provides issues specifically related to generalist teachers in NSW.

### **Research Studies of Teachers of Primary School PE in NSW**

Research-based evidence to inform the preparation, education and on-going professional development of generalist teachers responsible for the delivery of Physical Education in NSW primary schools is limited. Of the four genres of research described by Borko et al., (2008), studies of NSW pre-service and in-

service generalist teachers typify blended examples for *effects of teacher education* and *interpretive research*. To reiterate, *effects of teacher education research* seeks to identify stable propositions that may apply to similar contexts whilst *interpretive research* aims to describe local meanings often from perspectives of participants.

Five themes derived from this review of literature describe the foci of research interest in the context of pre-service and in-service generalist teachers in NSW who deliver Physical Education in primary school. These foci include the generalist teachers': *Perceptions of PE*; *PE biography*; *PE teaching confidence*; *Beliefs*, and *Perceptions of barriers and improvements*.

### ***Perceptions of PE***

Gard and Fry (1997) studied the understandings of 49 pre-service teachers enrolled in the first of two curriculum subjects pertaining to the PDHPE key learning area of the NSW curriculum. All participants were in the first year of a primary teaching degree. One finding of this study was a narrowly defined understanding of Physical Education dominated by *Games and Sports*. To a question related to present feelings about teaching PE to K-6 students with a five-point Likert scale ranging from “very apprehensive” to “very confident”, the highest mean rating (4.48) was for *Games and Sports* with *Gymnastics* scoring the lowest mean ranking (3.13).

Webster's (2001) doctoral thesis investigated teachers' perceptions of Physical Education within the K-6 PDHPE key learning area in NSW primary schools. Participants were 227 teachers in 37 primary schools. Findings suggest that teachers of PE were generalists who had completed only compulsory units of study in Physical Education during teacher education. The majority of participants reported being dependent on previous personal knowledge and experience to teach predominantly fitness, games, and sports skills. Gymnastics and adaptive Physical Education received minimal attention due to limited expertise.

Morgan and Bourke (2004) and Morgan (2008) reported on findings from an investigation of 422 pre-service (Year 2, 3 and 4) and 63 in-service generalist primary teachers. Findings suggest that most cohorts considered PE to be a relatively valuable Key Learning Area (KLA) but indicated they would prefer to teach KLAs other than PE. Both in-service and pre-service teachers cited insufficient time as an impediment to the delivery of PE programs.

Morgan and Hansen (2008c) examined the perceptions of classroom teachers from 38 randomly selected primary schools in NSW, regarding the benefits and outcomes of their PE programs. Results indicated teachers believed PE: provides children with opportunities to improve fitness and be active to counter societal trends towards obesity and increased sedentary behaviours; impacts positively on learning and behaviour in the classroom; and helps children to improve social skills and allows some children an opportunity to experience success in a unique learning environment. Yet these teachers believed their programmes were only somewhat successful in achieving outcomes relating to physical activity, self-esteem, motor skills and fitness.

### ***PE biography***

Morgan, Bourke, and Thompson (2001) investigated the influence of personal school Physical Education experiences on attitudes towards PE, beliefs about the benefits of PE and perceived confidence teaching PE. Participants in this study included 386 non-specialist teachers in Years 2, 3 and 4 of pre-service education. Results indicated that the quality of an individual's school PE experience directly predicted their current attitudes and beliefs about PE and commitment to physical activity.

Morgan and Hansen (2008a) reported a significant relationship between personal school experiences in PE and current PE teaching practices of 189 teachers from 38 randomly selected schools. Many participants had negative memories of school PE and believed that during Physical Education they were not taught anything. A hierarchical regression analysis was employed to test a model that could identify personal school experiences in primary school PE, quality of pre-service education and attitudes to teaching PE as significant predictors of PE programme quality. These predictors accounted for 32% of the variance.

### ***PE teaching confidence***

Gard and Fry's (1997) second finding was derived from analysis of data collected from a "feelings" question related to teaching PE to K-6 students. A five-point Likert scale ranging from "very apprehensive" to "very confident" was employed. Results showed that the highest mean rating (4.48) for *Games and Sports* with *Gymnastics* scoring the lowest mean ranking (3.13).

Morgan, Bourke and Thompson's (2001) study of primary education students enrolled in a NSW university also reported variation in participants' confidence teaching content areas in Physical Education. Basic motor movement was the content area respondents in that study felt most comfortable to teach followed by fitness and major games. Gymnastics was the least preferred aspect of PE to teach which supported the findings of Hickey (1992).

Morgan and Bourke (2005b) report that primary school teachers possessed only "moderate" levels of confidence to teach PE. Further, participants in this study did not consider their Physical Education Teacher Education (PETE) to be effective in preparing them to teach PE. A key finding of this study was significant ( $p=0.01$ ) relationships between PE teaching confidence and perceptions of Physical Education Teacher Education (PETE) for all content areas examined.

Morgan and Bourke's (2008) study also indicated that the quality of an individual's school PE experiences directly predicted his or her confidence to teach PE (variance explained = 30%). Memories of poor quality school PE, was a reason provided for lack of confidence to teach PE.

### ***Beliefs***

Morgan, Bourke and Thompson's (2002) study of attitudes and beliefs about the teaching of primary school PE included data collected from 570 pre-service non-specialist teachers in 2nd, 3rd and 4th year at the University of Newcastle in New South Wales. Non-specialist teachers had significantly lower scores on all attitudinal measures than specialists. Non-specialist scores for all constructs were higher for more advanced cohorts in pre-service education and consistently lower at the in-service level.

Morgan and Hansen (2008c) found in-service teachers in NSW primary schools believed firstly, primary school Physical Education was beneficial as an opportunity to improve fitness, to be active and improve social skills and secondly, their programmes were "only somewhat successful" in achieving outcomes related to physical activity, self-esteem, motors skills and fitness. The researchers concluded that programmes offered by these teachers had "little educational value."

### *Perceptions of barriers and improvements*

Morgan and Hansen (2007, 2008b) report that classroom teachers perceive the greatest barriers affecting their capacity to deliver successful physical education (PE) programs were teacher-related or institutional. Of these, five barriers were institutional and therefore out of the teacher's direct control. Effects of these barriers were evident in reduced time spent teaching PE and delivering PE lessons of questionable quality.

Morgan and Hansen (2007a) reported from NSW classroom teachers' insights into ways in which the quality of primary school PE can be improved that teachers believed that they were not adequately planning, implementing, assessing, reporting, or evaluating PE programs.

In summary, studies of NSW generalist pre-service and in-service teachers who are ultimately responsible for the delivery of Physical Education in primary schools suggests that pre-service teachers hold

- “narrowly defined” perceptions of primary school Physical Education dominated by games and sports (Gard & Fry, 1997; Morgan & Hansen, 2008a, Webster, 2001);
- negative memories of school PE (Morgan & Hansen, 2008a) that may directly predict current attitudes and beliefs pertaining to Physical Education or teaching PE;
- positive beliefs regarding the benefits (Morgan & Bourke, 2008c), value (Morgan & Bourke, 2004) and importance of Physical Education;
- preference to teach key learning areas of the NSW primary school curriculum other than PDHPE (Morgan, 2004; 2008);
- lower attitudinal measures related to teaching PE than specialist PE teachers (Morgan, Bourke & Thompson, 2002) which improve with increased study in a teacher education program (Morgan, Bourke & Thompson, 2002);
- “only moderate” levels of confidence to teach primary school PE (Morgan & Bourke, 2008);

- beliefs that the PE programs they experienced as school children together with those they deliver as service teachers have little educational value (Morgan & Hansen, 2008b; 2008c); and
- insight that they do not adequately plan, implement, assess, report or evaluate PE (Morgan & Hansen, 2007).

These findings provide the boundaries of research-based evidence related to knowledge of the issues related to preparing generalist teachers responsible for the delivery of PE in NSW primary schools in the context of pre-service teacher education.

### CONCLUSION AND RESEARCH ISSUES

This section has two parts. The first part presents conclusions from this review of literature. The second part identifies research issues emerging from these conclusions pertinent to this investigation.

#### Conclusion

In the light of evidence presented in this review in tandem with the challenge from the National Senate Inquiry (1992) for teacher educators to respond to findings that teachers feel unprepared or lacking in confidence to teach Physical Education, the following issues are relevant.

- *University based Teacher Education* provides a complex context from which to define the purpose of teacher preparation or the type of teacher and teaching that may be expected of graduates. A key contributor to this complexity is tension between the purpose of professional education and vocational preparation.
- Ideas and innovations for the idea of university-based *Primary School Teacher Education* have been constrained by the largely political, economic and social demand to prepare graduates as *generalist* teachers. Typically, generalists or classroom teachers are focussed on in the overall education of a class group of primary school children across all areas of curriculum.
- The idea of *Physical Education Teacher Education (PETE)* has been oriented to the preparation of “subject” specialists. Like *Teacher Education* more generally, diverse conceptions of teacher and teaching underpin PETE

programs. Since these purposes do not include specialisation in the holistic education of classes of primary school-aged children across all aspects of curriculum, there is little evidence to support the idea that PSTE-PE is a subset of PETE.

- The research base for *Primary School-Teacher Education Physical Education* is beginning to reveal the scope of additional complexities and challenges facing those responsible for teacher preparation. The chain of evidence connecting teacher biography to attitudes, beliefs, knowledge and experience pertaining to Physical Education is beginning to inform greater understanding of what is involved for generalist pre-service teachers to learn-to-teach Physical Education.

Overall, these conclusions have revealed some emerging research issues that if pursued, may further advance an understanding of pre-service teachers perceptions of preparedness to teach primary school Physical Education with respect to their pre-service teacher education. Issues for research are presented next.

### **Research Issues**

Emerging from these conclusions are three research issues, namely *Perceptions of preparedness to teach*, *Contributors to perceptions of preparedness to teach*, and *Pre-service teacher education and subject specialisation*.

#### ***Perceptions of preparedness to teach***

The first issue is related to the absence in the literature of either a conceptual or theoretical description for *perceptions of preparedness to teach*. What are these perceptions? What research instruments other than Likert scales have a potential to measure these perceptions? Other than ostensive definition, do these perceptions have a form or structure? If so, would these forms or structures conform to existing theoretical constructs?

#### ***Contributors to perceptions of preparedness to teach***

The second issue centres on the assumption that to advance perceptions of preparedness to teach, “more” subject specialisation during initial teacher education is “better.” From the point of view of pre-service teachers, what are contributors to perceptions of preparedness? Are contributors inherent in the biography of pre-

service teachers? Are these contributors attributed to university-created learning experiences?

***Pre-service teacher education and subject specialisation***

The final issue relates to the amount or length of tertiary study of Physical Education required to ensure that pre-service teachers feel prepared to teach primary school PE. What should be recommended as the minimum requirement for tertiary study of a subject in a Primary Teaching Degree program? Is increasing opportunity for tertiary study of a school subject identifiable as a strategy to increase perceptions of preparedness to teach?

In concert, these three research issues arising from the review of literature have established a need for an investigation of pre-service teachers' perceptions of preparedness to teach primary school Physical Education. The next chapter, Chapter Three, describes the preferred theoretical orientation adopted to conduct this investigation.

## CHAPTER THREE

### THEORETICAL ORIENTATIONS

It is doubtful that a phenomenon as complex as adult learning will ever be explained by a single theory, model or set of principles ... where we are headed, it seems, is toward a multifaceted understanding of adult learning, reflecting the inherent richness and complexity of the phenomenon. (Merriam, 1993, p.12)

The position expressed by Merriam (1993), that understanding of adult learning is progressing toward multifaceted explanation, provides an apt introduction to this chapter, for two reasons. Firstly, this position portrays adult learning as complex, rich and multi-faceted rather than bound by a single, universal theory. Secondly, this position frames as challenging the choice of a preferred theoretical orientation to learning-to-teach primary school Physical Education to underpin this study. This chapter has three sections. The first section backgrounds *Theoretical Orientations in Education*. The second section outlines *Theoretical Possibilities for this Investigation*. The final section details the *Preferred Theoretical Orientation*.

#### THEORETICAL ORIENTATIONS IN EDUCATION

In this thesis, a *theoretical orientation* refers to dominant theories, ideas and concepts that inform, guide or direct progress in an area of human enterprise. As such, these orientations serve two functions. The first function is to define boundaries to include, exclude or envisage theoretical possibilities and thereby limit and de-limit the focus of enquiry. The second function is to define the “way of knowing” how to progress in the preferred direction. Essentially, a *theoretical orientation* frames the nature of most inquiry.

Theory “varies quite considerably according to the discipline or area of knowledge in question” (Cohen & Manion, 2001, p.12). In Education, theoretical descriptions may take different forms including grand theory, models, frameworks, heuristics and concepts. Sometimes these terms are used interchangeably in the literature. At other times, scholars identify distinct differences between theoretical “forms.” For

example, a theory describes, explains or predicts a phenomenon whereas a model of that same phenomenon may employ a representational metaphor. Irrespective of these differences, all forms of educational theory are intended to provide “a well-documented explanation for a phenomenon related to teaching and/or learning” (Tracey & Morrow, 2006, p.4).

Typically, theories in education are “built from research evidence to have explanatory power” (Fry, Ketteridge & Marshall, 2009). Essentially, “theory-building” is a process whereby isolated “bits” of empirical data are gathered into “a coherent conceptual framework of wider applicability” (Cohen et al., 2007, p.12). When a set of interrelated “bits” (concepts) are defined in a systematic way to explain and predict a phenomena, a theory results. Accordingly, at this juncture “Educational research is not about proving or disproving theories, but about creating them from research data” (Fry et al., 2009, p.8).

An enduring challenge for educators is conceptualising meanings for key educational ideas. Typically, for each idea “There is not one single theory, but many theories, each of which is an arena for debate in its own right” (Edwards, 2005, p. 615). Further, given that “Theory is not insulated from its subject matter; it changes and mutates and takes many forms” (Giddens, 1987, p.311). These forms reflect different ways in which subject matter has been generalised, brought in relationship to other concepts and integrated into a coherent framework. Accordingly, interdisciplinary contributions to these generalisations sourced to philosophy, sociology and psychology offer alternative sets of meanings.

In the more specific context of Adult Education, “Rather than a single definition or description of adult learning, what we have is a colourful mosaic of theories, models, sets of principles, and explanations that combined, form the knowledge base of adult learning” (Merriam, 2005, p.42). For instance, Mezirow and Associates (2000) claim to have identified twenty-four diverse but related theories of learning available to guide educators of adults. What differentiates these theories, whether models, sets of principles heuristics or frameworks, is the degree of sophistication for the description of the phenomenon and its generalisability beyond the context of the research base from which the description was formulated. In this way, a *theory* of learning may be considered a more sophisticated description of learning than a

*model* for learning. Similarly, a model of learning offers greater sophistication than a *heuristic* for learning.

### **Orientations to Learning**

An idea, subject or concept central to this investigation is *learning*. Generally, educators are in agreement that *learning* is multifaceted in nature (Taylor, 2005) but “defies easy definition and simple theorizing” (Merriam & Caffarella, 1999, p. 248). At different times, in different settings, people with different epistemologies have offered multiple theories for “learning”. Rather than framing this diversity as a problem, each contribution may be envisaged as a further source of comparison and critique (Taylor, 2005) to advance educators’ research and practice.

Several efforts have been made to organise learning theories into classifications including: McDonald (1964); Reese & Overton (1970); Gage (1972); Hilgard & Bower (1996); and Gredler (2001). For example, Gredler (2001) differentiated traditional from contemporary theories to describe three orientations, termed behaviouristic, cognitive, and interactionist. The traditional perspective includes three orientations, namely the

- *Behaviouristic orientation* from which learning is considered a change in behaviour (Gredler, 2001; Merriam & Caffarella, 1999) and understood as an observable, external event in response to an element in the environment. Originators and contributors to this orientation include the work of Thorndike (1910), Pavlov (1927), Watson (1924), Tolman (1932), Skinner (1938), and Hull (1943);
- *Cognitive orientation* from which learning is understood in terms of internal mental processes such as changes to mental constructions or schema. The founder of this orientation was Chomsky (1957) who opposed the behaviourist view of the mind as a *tabula rasa* (blank slate). Other contributions to this orientation include Piaget (1952), Vygotsky (1962), Flavell (1963), and Gardner (1993); and
- *Interactionist orientation* whereby learning is an interaction of environment, mental processes, and behaviour. More specifically, “Learning involves the observation/modelling of others, a particular environment mediated by internal mental events that influence perception and action; and the outcome

of internal symbolic codes that guide future behavior” (Taylor, 2005, p. 349). Contributors to his orientation include Lewin (1951) and Bandura (1969).

In addition to the three traditional perspectives, Gredler (2001) identified two further orientations, both of which were termed “contemporary”. These orientations included the

- *Neuro-physiological orientation* in which learning is understood in relation to anatomy, physiology and the pathology and functioning of the brain. From this orientation, learning is physiological change (see for example: Boucouvalas, Restak, Sylwester, Caine and Caine, and Gardner); and
- *Evolutionary orientation* from which learning is adaptation of the human mind comprising a large number of innate learning mechanisms (Barklow, Cosmides & Tooby, 1992). These mechanisms have evolved over time to solve specific adaptive problems in the environment. From this orientation, learning is adaptive change (see for example: Buss, Gazziniga, Pinker, Barkow, Cosmides, and Tooby).

Orientations to learning have also been differentiated by paradigm. Two paradigms, namely constructivism, and humanism dominate the literature. Each paradigm provides an alternative perspective.

- *Constructivism* posits that learners construct knowledge and learning is an active, constructive process (Piaget, 1935). People actively construct or create their own subjective representations of objective reality. New information is linked to prior knowledge. Thus mental representations are subjective and contextualised. Each person has a different interpretation and construction of past experience. Originators and contributors include: Dewey (1896), Piaget (1935), Bruner (1956), and Vygotsky (1962).
- *Humanism* assumes that people act with intentionality and values (Huitt, 2001). To understand learning from this paradigm it is necessary to study the person as a whole over the lifespan. The development of self-actualized, autonomous people is a primary purpose of humanism. The study of the self, motivation and goals are areas of particular interest. Key proponents of humanism include Maslow (1941) and Rogers (1942).

Whilst descriptions of these orientations and paradigms are not exhaustive, they serve to illustrate different ways in which *learning* may be explained. For example, emanating from the behaviourist orientation *learning* is viewed as “a relatively permanent change in the probability of exhibiting a certain behaviour resulting from prior experience (successful or unsuccessful)” (Mowrer & Klein, 2001, p.2). In contrast, a definition from a cognitive orientation and constructivist paradigm claims that: learning is about how we perceive and understand the world, about making meaning (Marton & Booth, 1997). A humanist orientation views learning as the development of self-actualised people.

In summary, educational theories comprise research-based descriptions for ideas related to education. Beyond recognised learning theories are concepts, systems, models, structures, beliefs and ideas (Hitchcock & Hughes, 1995, p.21) that suggest future directions (Merriam & Cafferella, 1999, p.267) or guide progress (Tinning, 2006). Disagreement related to the relationship of different forms of theoretical description appears commonplace. Furthermore, as there are different orientations and paradigms for understanding *learning*, a state of “theoretical eclecticism” currently prevails to inform educational researchers and practitioners. It was from this state that possibilities for a theoretical framework for this study were considered.

#### **THEORETICAL POSSIBILITIES FOR THIS INVESTIGATION**

A theoretical orientation for this investigation was selected from a historic list of ninety-four major contributors to the literature of learning theory. This list, constructed by Knowles, Holton and Swanson (2005, p.18), identified major contributors to learning theory as those “who have made the greatest impact on the thinking of others”. The process of short listing is illustrated through two examples of contributors excluded from the investigation. These examples, namely, Gagné (1968) followed by Biggs and Collis (1982). Each example makes transparent reasons why the theories of these contributors were not deemed relevant to the context of this research.

Gagné’s (1968) Theory of Cumulative Learning was considered for the present study. This theory is based on five domains of learning, namely, motor skills, verbal information, intellectual skills, cognitive strategies and attitudes, together with a

hierarchy of learning. The individual “learns an ordered set of capabilities which build upon each other in progressive fashion through the processes of differentiation, recall, and transfer of learning” (Gagné, 1968, p.44). Much of what is learned by adults takes the form of complex rules at the top of the sequence of cumulative learning. Gagné’s theory was not preferred for this study because of an apparent absence of a literature-informed and “ordered set of capabilities” for teaching primary school Physical Education.

Another theoretical perspective considered for this study, was the Structure of Observed Learning Outcomes (SOLO) Model developed by Biggs and Collis (1982). This model describes a hierarchy of five modes of learning in which there is a further hierarchy of levels and cycles. Biggs and Collis (1982) considered that individuals could function in one (uni-modal) or a number of learning modes (multi-modal learning). The SOLO model demonstrates how cognitive growth is sequential and modal shifts occurred when individuals were forced to reorganise their prior knowledge to solve a problem. Within each level, movement from one cycle to the next was hypothesized as being triggered by dissatisfaction with performance. In the pre-empirical stage of this study, SOLO was not adopted because the researcher did not believe that student teachers’ perceptions of preparedness to teach were directly observable.

Essentially, the process of reducing contributors to the literature of learning theory continued until a “theory-of-best-fit” was identified. This theory was termed the *preferred theoretical orientation* for the study. Best-fit was determined through congruency with the aim and design of the research together with pragmatic considerations regarding conducting the research. Preference was referenced to the potential to expand present understandings of learning-to-teach primary school Physical Education in a university-based teacher education program.

### **Preferred Theoretical Orientation**

Mezirow and Associates (2000) Transformative Learning Theory was selected as the preferred theoretical orientation to investigate pre-service teachers’ perceptions of preparedness to teach Primary School Physical Education. From this orientation, *learning* was “the process of using prior interpretation to construe a new or revised interpretation of the meaning of one’s experience in order to guide future action” (Mezirow, 1991, p.12). This section provides a *Rationale* for selecting this theory

together with orientations to *Transformation Theory*, *Transformative Learning* and key elements of *Transformative Learning Theory*.

### ***Rationale***

The context of the research created four boundaries employed to select the preferred theoretical orientation for the investigation. These boundaries were the

- age of participants being greater than 18 years of age. In Australia, this age range defined participants legally, socially and psychologically as *adults* because they were of voting age, performing adult roles, responsible and, thereby, directing their own lives (Knowles, Holton & Swanson, 2005);
- context of student learning in formal, tertiary or higher education;
- task of preparing student teachers to deliver forms of primary school Physical Education outside of student teachers' personal experiences; and
- research focus being *action* as opposed to "behaviour." According to Cohen et al., (2007), *action* is future oriented, intentional behaviour whereas *behaviour* lies in past responses to stimuli.

Bounded in this way, the preferred theoretical orientation was directed toward an adult learning theory applicable to the context of higher education that included consideration of student teachers' personal experiences of Physical Education. Consequently, the context of the study provided the rationale for considering a *Transformation Theory* from which student teachers' learning may be investigated as *Transformative Learning*.

### ***Transformation Theory***

Theories based on *transformation* contend that learning changes not only "what we know" and "how we know" but "the existing *form* of our way of knowing" (Kegan, 2000, p.49). In the word "trans-*form*-ative", the *form that changes* is a mind that is no longer socialised but self-authoring (Kegan, 2000, p.65). Transformed in this way, the learner values greater personal authority, self-direction and internal authority so as to make their own judgements and decisions regarding the meaning of experiences in their lives.

Transformational Theory situates *learning* as a process of interpreting and re-interpreting the meaning of experiences to guide future action. Central to this

process is reflection on the limits, certainty or criteria of knowledge (Kitchener, 1983) associated with “a prior interpretation to construe a new or revised interpretation of the meaning of one’s experience” (Mezirow, 2000, p.5). Essentially, transformed perspectives guide future action because “reified forms of thought” (Mezirow, 2000, p.27) are no longer dependable or justified. This re-interpretation of experience shifts knowledge “from the edge of knowing” to “new knowing” such that “life is not seen from a new perspective, it is lived from that experience” (Paprock, 1992, p.197).

### ***Transformative Learning***

The body of works related to transformative learning includes multiple conceptions (Taylor, 2008) and perspectives. Merriam (2001) identified four perspectives, namely psychoanalytic (change in understanding oneself); psycho-developmental (change in how we make meaning), psycho-critical (change to what we think) and social emancipatory (social change). More recently, Taylor (2008) identified the emergence of a neurobiological perspective (change in brain structure); a cultural-spiritual perspective (change in connections between individuals and social structures); a race-centric view (changes to cultural boundaries) and a planetary (change to whole systems and their interconnections).

In an effort to organise different orientations to Transformative Learning, Taylor (2008) offered two frameworks. As shown in Figure 3.1, these orientations differ in terms of proponents, emphasis, unit of analysis, and core elements. Theoretical descriptions from *Framework I* emphasise changes to the “individual” whereby critical reflection and critical self-reflection is associated with personal transformation and growth. By contrast, conceptions of transformative learning portrayed in *Framework II* emphasise social change and transformation associated with ideological and/or political critique in which the unit of analysis is the link between social and individual change.

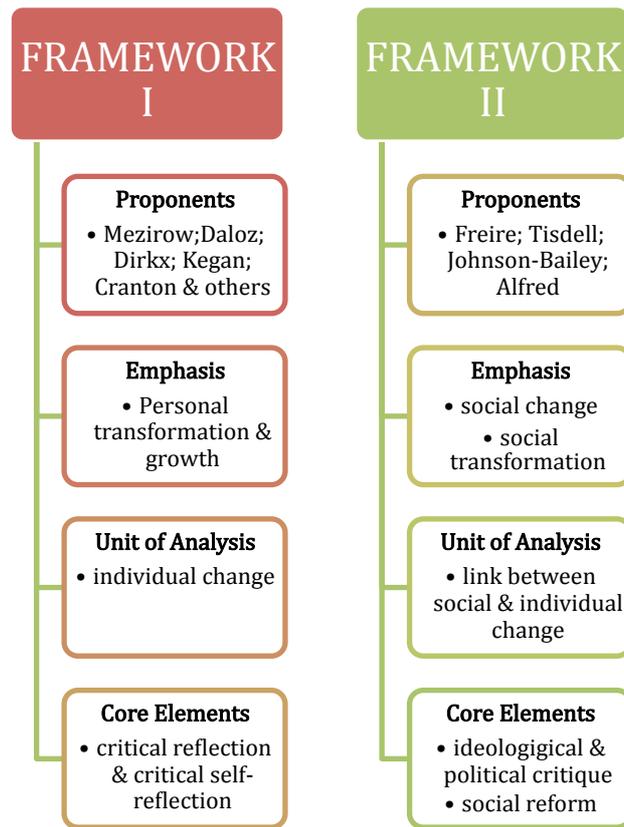


Figure 3.1. Two theoretical frameworks for Transformative Learning

Of the two frameworks shown in Figure 3.1, the emphasis and units for analysis for *Framework I* aligned most closely to the context of this investigation. For example, the Health, Physical Education and Sports Studies (HPESS) program was directed more immediately to “personal transformation and change” with the unit of analysis being change in “individual” student teachers as opposed to “social change”. Whilst the longer term agenda may have “links between social and individual change,” namely teachers as agents for change in curriculum implementation, the context of initial teacher education situated the investigation within *Framework I*. This decision oriented preferences toward the work of proponents from *Framework I*. This decision was affirmed by the recent trend for theories of transformative learning to move away from social issues to a greater emphasis on individual learning (Cranton, 2006).

The next section presents the preferred theoretical orientation for this investigation, namely Mezirow and Associates (2000) Transformative Learning Theory. The section begins with background to the research base of the theory followed by

discussion for *Meaning Making; Meaning Making Structures and Modifying Meaning*.

### **TRANSFORMATIVE LEARNING THEORY**

In 1978 a research base for transformative learning evolved out of Mezirow's study of women returning to higher education in the United States. Initially, Mezirow (1991, p. xvii) published his ideas "to evoke critical discourse" and also to create an opportunity to "work with others to formulate a theory of adult learning that will be useful to professionals engaged in helping adults learn" (p. xviii). "Others" who responded to this invitation were subsequently named "Associates." The most contemporary description for *Mezirow and Associates* interpretation of Transformative Learning was published in 2000. Since then, Mezirow (2010, p. 18) has urged "recognition of a critical dimension of learning in adulthood that enables us to recognize, reassess, and modify the structures of assumptions and expectations that frame our tacit points of view and influence our thinking, beliefs, attitudes, and actions."

Mezirow and Associates (2000) conception of Transformative Learning Theory maintains Mezirow's (1991, p.3) description for the way adults learn to "negotiate meanings, purposes, and values critically, reflectively, and rationally instead of passively accepting the social realities defined by others." The theory includes key terms to explain aspects of the learning process, which Mezirow (2009, p.21) later termed the generic structure, dimensions, and dynamics of learning. "To avoid use of unfamiliar jargon" (Weissner & Mezirow, 2000, p.345) employed in Mezirow's early reporting of his study and theory some key terms have been changed.

The language of Transformative Learning Theory serves three purposes. These purposes are to describe, explain or predict:

1. How meaning is "construed", validated and reformulated;
2. Structures involved in the meaning-making process; and
3. Dynamics involved in modifying meaning.

Terms employed for these purposes, namely *Meaning Making, Meaning Structures, and Modifying Meaning* are the subject of the following sub-sections.

### Meaning Making

One of three purposes for Mezirow and Associates (2000) theory was to offer a description of how *meaning* is construed (arranged and combined), validated, and reformulated. A language of key terms employed to describe, explain or predict the process of *Making Meaning* are found in Table 3.1. To ensure accuracy, most of these terms are described in Table 3.1 employing direct quotes from the literature. Key terms are ordered from top to bottom in Table 3.1 to explain the process of meaning making.

Table 3.1.

#### *Key Terms from Transformative Learning Theory - Meaning Making*

Key Term	Description
Meaning	“An interpretation” (Mezirow, 1991, p.4) that “makes sense of, or gives coherence to, an experience” (p.11).
Meaning Schemes	A mental structure which “sets priorities, determines relevance, and determine the focus of attention and what will enter our awareness” (Mezirow, 1991, p.48) and thereby “the particular knowledge, beliefs, value judgements, and feelings that become articulated in an interpretation” (p. 44).
Meaning Perspectives	Rule systems that generate meaning schemes (Mezirow, 1991, p. 62). These perspectives are “the structure of assumptions within which one’s past experience assimilates and transforms new experience” (p. 42).
Transformative Learning	“A process by which previously uncritically assimilated assumptions, beliefs, values, and perspectives are questioned and thereby become more open, permeable, and better justified” (Mezirow, 2000).

In concert, these key terms convey that meaning is made from experience; meaning schemes and perspectives are used to interpret that experience; and, when the meaning of a past experience transforms the meaning of a new experience, transformative learning has taken place.

### Meaning-making Structures

A further purpose for Mezirow and Associates’ (2000) theoretical description for Transformative Learning Theory was description of the structures involved in the process of making meaning. To achieve this purpose, the theory introduced terms

for *Meaning Making Structures*. These structures were termed *frames*, *frames of reference*, *habits of mind*, and *points of view*. Definitions for each of these terms are listed in Table 3.2. The list begins with the generic structure, namely *frame*, then continues to show how learning occurs through these structures by either: elaborating existing *frames of reference*, learning *new frames of reference*, transforming *points of view*, or transforming *habits of mind*.

Table 3.2.

*Key Terms from Transformative Learning Theory - Meaning Making Structures*

Key Term	Description
Frames	A psychological frame of “collectively held meaning perspectives” (Mezirow, 1991, p. 47) that define “the context of a social situation and how to understand and behave in it” (Mezirow, 1991, p. 47).
Frame of Reference	A psychological frame, the structure of which “serves as the boundary condition for interpreting the meaning of an experience” (Mezirow, 1991, p. 32). This frame comprises “Structures of assumptions and expectations on which are thoughts, feelings and habits are based” (Mezirow, 2009, p. 22). A <i>frame of reference</i> has two dimensions, namely, a <i>habit of mind</i> and resulting <i>points of view</i> .
Habits of Mind	“A set of assumptions – broad, generalized, orienting predispositions that act as a filter for interpreting the meaning of experience” (Mezirow, 2000, p. 17).
Points of View	“Clusters of meaning schemes – sets of immediate specific expectations, beliefs, feelings, attitudes and judgements – that tacitly direct and shape a specific interpretation and determine how we judge, typify objects, and attribute causality” (Mezirow, 2000, p.18).

When defining the generic structures shown in Table 3.1, Mezirow (1991) drew parallels with terms offered by other authors. Examples include “horizons of expectations” (Popper, 1972), “perceptual filters” (Roth, 1990), “paradigms” (Kuhn, 1983), “frames” (Bateson, 1972; Goffman, 1974), “ideologies”, “schema” (Goleman, 1985), “personal constructs” (Kelly, 1963), and “language games” (Wittgenstein, 1958). Hence, structures in Mezirow and Associates (2000) interpretation of Transformative Learning Theory may be understood as variations

on existing ideas. Sub-sections to follow provide a brief interpretation of each structure.

### ***Frames of Reference (FoR)***

A *FoR* is a specific psychological frame associated with the process of making meaning from experience. More specifically, this frame is the structure of “assumptions and expectations on which thoughts, feelings and habits are based” (Mezirow, 2009, p.22). This structure includes rules, criteria standards, ideology or codes that act as “reference points”, “horizons” or “filters” to shape and delimit interpretation of experience. These frames and associated cognitive (thoughts), affective (feelings) and conative (striving) dimensions predispose an individual’s intentions, purposes and expectations. Usually, individuals are neither aware, nor conscious, of these “meaning-making” processes. Individuals know only of the result.

A *Frame of Reference (FoR)* is made up of a *Habit of Mind* and its resulting *Point of View*. If the frame is too narrow, closed and restrictive, new or different perspectives cannot be accommodated and the structure is seen to be problematic. Learning that transforms a problematic *FoR* makes a person more emotionally able to change. New frames are better than the old because they are more open, inclusive, discriminating or reflective (Mezirow, 2003).

### ***Habits of Mind (HoM)***

The structure coded *HoM* is the broad but unexamined predispositions that act as a filter when interpreting the meaning of experience. The structure comprises a set of broad, generalized, orienting assumptions absorbed or worked out from the individual’s experiences, background, cultural beliefs and personality preferences (Cranton & Tisdell, 2008). A *Habit of Mind* is expressed as a *Point of View*.

Mezirow and Associates (2000) description of Transformative Learning Theory includes six, overlapping and inter-related varieties of *Habits of Mind*. These varieties together with the foci for assumptions were termed

- *epistemic*: knowledge and the way knowledge is acquired (e.g., focus on whole or parts, or, concrete or abstract);
- *sociolinguistic*: social norms and the way language is used (ideologies; social norms);

- *psychological*: how people envisage themselves (emotional response patterns; self-concept);
- *moral-ethical*: conscience and morality (moral norms);
- *philosophical*: one's worldview or religious doctrine (philosophy); and
- *aesthetic* – standards about beauty (e.g., values, tastes, standards).

Included in Mezirow's (2000, p.18) examples for a *Habit of Mind* were: "preference to work alone or with others"; "tendency to respect or challenge authority"; "approaching a problem analytically or intuitively"; "fear of change"; and "thinking conventionally about one's role."

### ***Points of View (PoV)***

As a structure, a *PoV* comprises clusters of meaning schemes that serve to "suggest a line of action that we tend to follow automatically unless brought into critical reflection" (Mezirow & Associates, 2000, p.18). Clusters include sets of specific expectations, beliefs, feelings, attitudes and judgements that shape interpretation of experience. Typically these views are emotionally charged and therefore strongly defended.

### **Modifying Meaning**

Processes involved in *Modifying Meaning*, namely, *learning*, *reflection* (in three forms), *discourse* and *transformation* are introduced in Table 3.3 as a series of direct quotes from literature. In this tabular description, *learning* is presented first to signal the relationship between experience, interpretation and action. The description for *Transformation* is provided last to emphasise the reformulation of meaning structures over time that leads to "the creative implementation of a purpose" (Mezirow, 1991, p.12) referred to as action. Between *learning* and *transformation* are two meaning-making processes, namely, *reflection* (critical and critical self-reflection) and *discourse*.

Table 3.3.

*Key Terms from Transformative Learning Theory - Modifying Meaning*

Key Term	Description
Learning	“The process of using prior interpretation to construe a new or revised interpretation of the meaning of one’s experience as a guide to future action” (Mezirow, 2000, p. 5).
Reflection	“... the central dynamic involved in problem solving, problem posing, and transformation of meaning schemes and meaning perspectives” (Mezirow, 1991, p. 116).
Critical Reflection	“... questioning the integrity of deeply held assumptions and beliefs based on prior experience” (Taylor, 2009, p. 7).
Critical Self-reflection	“... a rational process of seeing that previously-held views no longer fit - they are too narrow, too limiting” (Cranton & King, 2003).
Discourse	“... process in which we have an active dialogue with others to better understand the meaning of an experience” (Mezirow, 2000, p.14).
Transformation	“A movement through time of reformulating reified structures of meaning” (Mezirow, 2000, p.19).

The processes of *reflection* and *discourse* described in Table 3.3 are central to Mezirow and Associates’ (2000) theoretical description for transformative learning and thereby understanding of modifying meaning.

***Reflection***

Mezirow’s conception of *reflection* as the central dynamic in transformative learning extended Dewey’s (1933) definition for “reflective thought”. According to Dewey (1933, p.9) reflective thought entails “active, persistent and careful consideration of any belief or supposed form of knowledge in the light of grounds (evidence) that support it and the further conclusion to which it tends.” In the context of transformation theory this meaning for *reflection* equates only to “validity testing.” For Mezirow, the missing dimension of Dewey’s notion of reflection was “seeing through” the habitual way individuals interpret experience to “doubt the truth, validity, or assertions made or implied” (Mezirow, 1991, p.116). Consequently for Mezirow, *reflection* involves both rational examination of assumptions and critical reassessment of ways of knowing, perceiving, believing,

feeling and acting. For Mezirow (1990, p.xvi), *reflection* is the “examination of the justification for one’s beliefs, primarily to guide action and to reassess the efficacy of the strategies and procedures used in problem solving.”

Broadly, in the context of Transformative Learning Theory, *reflection* is a process of reconsidering experience through reason, and reinterpreting and generalising the experience to form mental structures (Fenwick, 2000; Mezirow, 2003). More specifically, *critical reflection* is a rational process of questioning and examining that “can lead to revision of values, beliefs, assumptions and even perspectives” (Cranton & Tisdell, 2008). *Critical reflection* directed toward the assumptions of others leads to objective reframing whilst *critical self-reflection* on one’s own assumptions leads to subjective reframing (Mezirow, 2000). Either way, the process is one of becoming more “open” (Mezirow, 1991) not one of changing one’s mind or adopting the “right” point of view (Cranton, 2005).

A certain level of cognitive development may be required to achieve *critical self-reflection* (Merriam, 2003) inferring that all individuals may not equally be ready to achieve such “openness.” Mezirow (2003) suggests that two distinctively adult learning capabilities need to develop. These are the capacity to be critically self-reflective (Kegan, 2000) and to exercise reflective judgement (King & Kitchener, 1994). According to Mezirow (2003, p.60), “These adult capabilities are indispensable for fully understanding the meaning of our experience and effective rational adult reasoning in critical discourse and communicative learning.” From this perspective, transformative learning requires *critical reflection* that itself is a developmental outcome (Merriam, 2004).

### ***Discourse***

The theoretical base for *discourse* as an essential process of transformative learning was Habermas’ (1961) Theory of Communicative Competence. This competence “involves an individual’s ability to negotiate meanings and purposes instead of passively accepting the social realities defined by others” (Mezirow, 1991, p.96). To participate in rational communicative action the individual reasons with others and self to weigh evidence and supporting arguments. In theory, the broader the opportunities for discourse to examine conditions under which an assertion has been found to be valid, the more reliable the meaning of the assertion will be.

In the context of Transformative Learning Theory, *discourse* is a process whereby individuals engage in active dialogue with others to assess their beliefs, feelings and values (Mezirow, 2003) for the meaning of experience. This dialogue is oriented to obtaining consensual validation (Mezirow, 2000) for personal meaning. According to Mezirow *discourse* requires a willingness and readiness to seek understanding through welcoming difference, “trying on” the points of view of others; identifying common ground amidst difference; tolerating paradox; searching for synthesis; and, reframing to reach some agreement. In this way, “Ideas and evidence from others help us to consider our own views in a new light” (Cranton, 2005, p.632). Outcomes are viewpoints that are more informed and dependable because they have been challenged and critically assessed when seeking agreement including validation from others.

According to Berger (2004, p.338), *dialogue* assists learners to identify their “edge of meaning” where limitations of knowing are acknowledged and “stretched.” Dialogue with educators, peers, friends, colleagues helps the individual to: articulate their own perspectives and see alternatives, break out of our frameworks of interpretation by reflecting our point of view back to others, unearth hidden assumptions and question their validity (Brookfield, 1991). In this way, dialogue in the context of transformative learning is more than analytic conversation (Taylor, 2009, p.10). Rather, *dialogue* “is a specialised use of dialogue that has as its goal reaching a common understanding and justification of an interpretation or belief” (Cranton, 2005, p.632).

Learner attributes associated with effective participation in discourse for transformative learning includes emotional maturity and clear thinking (Mezirow, 2000), a certain level of cognitive development (Merriam, 2003) and predispositions such as “readiness for change” (Taylor, 2000). Accordingly, Mezirow (2000, p.12) claimed that “discourse requires only that participants have the will and readiness to seek understanding and to reach some agreement.”

In summary, any description of Transformative Learning Theory published by either Mezirow or *Mezirow and Associates*, assumes understanding of the key terms of the theory found in Tables 3.2 - Table 3.4. In the next section, two contemporary descriptions are presented.

### **Contemporary Description**

A contemporary description for Transformative Learning Theory by Cranton (2005, p.631) states that:

People make meaning of the world around them through experiences. What happens once, they expect to happen again. Through this process, they develop habits of mind or a frame of reference for understanding the world, much of which is uncritically assimilated. Individuals absorb, in the process of daily living, values, assumptions and beliefs about how things are. When a person encounters something unexpected he or she either rejects the new information or begins to question the previously held assumptions. This has the potential to be transformative.

Essentially, the process involves constructing and appropriating new and revised interpretations of the meaning of an experience in the world (Taylor, 2008, p.5). Such learning takes place when people either: open up their frames of reference, discard a habit of mind to see new alternatives; acquire new knowledge and skills to support new courses of action (Cranton, 2005); act differently in the world (Mezirow & Associates, 2000); experiment with new roles and relationships (Cranton, 2005) or integrate the new perspective into their lives. In summary, “Transformative learning may be defined as learning that transforms problematic frames of reference to make them more inclusive, discriminating, reflective, open, and emotionally able to change” (Mezirow, 2010, p. 22).

Together with a general description of how adult learning occurs, Mezirow and Associates (2000) also offer a ten-phase description. The research base for these phases was derived from Mezirow’s (1991) original study of women returning to study after a hiatus. This early description has subsequently been researched and refined such that transformational learning is now understood to follow some variation of the following ten phases (Mezirow, 2010, p.19)

- A disorienting dilemma;
- Self-examination;
- A critical assessment of assumptions;
- Recognition of a connection between one's discontent and the process of transformation;
- Exploration of options for new roles, relationships, and actions
- Planning a course of action;

- Acquiring knowledge and skills for implementing one's plans;
- Provisional trying of new roles;
- Building competence and self-confidence in new roles and relationships; and
- A reintegration into one's life on the basis of conditions dictated by one's new perspective.

According to Taylor (1998; 2000), this ten-phase model has been confirmed in at least six studies conducted by Dewane (1993), Hunter (1980), Lytle (1989), Morgan (1987), Egan (1985) and Williams (1985). However, few studies confirm each phase. Later studies by Coffman, (1989), Elias (1993), Holt (1994), Laswell (1994), Neuman (1996), Saavedra (1995) and Taylor (1994) concluded that the process of perspective transformation was more recursive, evolving and spiralling in nature than once thought. Despite these anomalies, three themes in this description have remained constant, namely the centrality of experience, critical reflection, and rational discourse in the process of meaning structure transformation (Taylor, 1998).

### **Empirical Orientations**

Elements of Transformation Theory have been primarily validated through qualitative studies and professional discourse (Taylor, 2000). In defence of this position, Weissner and Mezirow (2000) suggest that elements of the theory are not amenable to hypothesis testing and measurement modes of empirical-analytical research. Consequently, empirical studies pertaining to Mezirow's description of transformative learning in general, and Transformative Learning Theory in particular, remain relatively scarce. Notwithstanding this limitation, thirty doctoral dissertations comprise the body of research. Foci of these studies have included inherent complexities of transformative learning and the nature of specific theoretical components of perspective transformation. Taylor (2000, p.287) suggests that these doctoral studies have found that this theory is "much more complex and multifaceted than originally understood".

Examples of developments to Transformative Learning Theory resulting from the body of research on Transformative Learning Theory and/or extended discourse include

- acknowledgement of variation in the phases of transformative learning in contexts different to the original study;
- recasting of key terms such that *meaning perspectives* are replaced by *frame of reference*; *meaning schemes* are now elements constituting a *point of view*;
- expansion of Mezirow's (1991) suggestive list of *meaning perspectives*, namely sociolinguistic, epistemic and psychological to include moral-ethical; philosophical; and aesthetic;
- more emphasis on the unconscious, affect and intuition in transformative learning; and
- possibilities to help learners identify their own frames of reference.

According to Taylor (2000), little research supports the claim that revision of established meaning perspectives takes place only in adulthood raising questions as to how transformative learning manifests with age.

In addition, Taylor (2000) recommended that future research: adopt a multifaceted approach; investigate theoretical comparisons with other models of learning; look beyond a basic phenomenological approach; “include longitudinal collaborative studies utilizing multiple methods of collecting data” (Taylor, 2000, p.323), and continue quantitative research seeking to operationalise components of transformative learning.

### **Criticism**

Critical reviews of Mezirow and Associates (2000) conception of transformative learning, including theoretical developments and research, are conducted and published regularly. Taylor's synthesis of the 1997, 1998, 2000 and 2008 manuscripts show that many of the issues identified as unresolved at that time have since been addressed by the *Associates*. Subsequently, the theory was developed. In the most recent critical review Taylor (2008) challenges scholars and educators to “look beyond” the dominant theory of transformation (Mezirow's) to new and emerging conceptions of transformational learning.

Whilst based on similar ideas, new alternatives of Transformative Learning Theory address factors overlooked by Mezirow and Associates (2000) rational emphasis on

transformation (Daloz, 1986; Kegan, 1994). Taylor (2008) identifies these factors as the role of spirituality, positionality, emancipatory learning, and neurobiology and an appreciation for the role of relationships, personal contextual influences, and holistic ways of knowing in transformative learning. Irrespective of the importance of these factors, “The exciting part of this diversity of theoretical perspectives is that it has the potential to offer a more diverse interpretation of transformative learning and have significant implications for practice” (Taylor, 2008, p.7).

Notwithstanding shortcomings and criticisms, Mezirow and Associates (2000) Transformative Learning Theory was selected as the preferred theoretical perspective for this research. Reasons provided to justify this preference were based on pragmatic considerations related to the purpose and context of the investigation. Notable amongst these considerations were characteristics of the people in the study (adults), the setting (tertiary or higher education) and the task of teacher education (potentially changing perceptions of preparedness). Additionally, the research was situated in this theory with potential to contribute to, or advance, this theory.

### CONCLUSION

This chapter has provided an overview of the process of locating and selecting a preferred theoretical orientation for this investigation. This process involved “funneling” and “filtering” broad, generalised orientations to learning relevant to the context of the research to identify a narrow, specific theoretical orientation. Broad orientations included consideration of Adult Learning Theory, Transformation Theory; Transformative Learning; and, finally Transformative Learning Theory. The final orientation, namely, Mezirow and Associates (2000) Transformative Learning Theory provides the preferred theoretical orientation for this research.

Mezirow and Associates (2000) theoretical description for Transformative Learning Theory is based on constructivist assumptions related to making and modifying meaning from experience. For this investigation, structures and dynamics for “meaning-making” described by this theory, created a potential to research pre-service teachers’ perceptions of preparedness to teach primary school Physical Education in the context of their experiences. This choice was premised on two perspectives. Firstly, research evidence that personal experience of PE and Sport

shape pre-service teacher's attitudes and beliefs for teaching primary school Physical Education. Secondly, the theoretical insight that student teachers' interpretation of these prior experiences may be reformulated to construe different sets of meaning for "quality" primary school Physical Education to inform future practice.

The next chapter, Chapter Four, presents the methodology employed to investigate pre-service teachers' perceptions of preparedness to teach and question the efficacy of increasing opportunity to study tertiary Physical Education during Initial Teacher Education. This methodology reflects the constructivist perspectives foreshadowed by the choice of this preferred theoretical orientation.

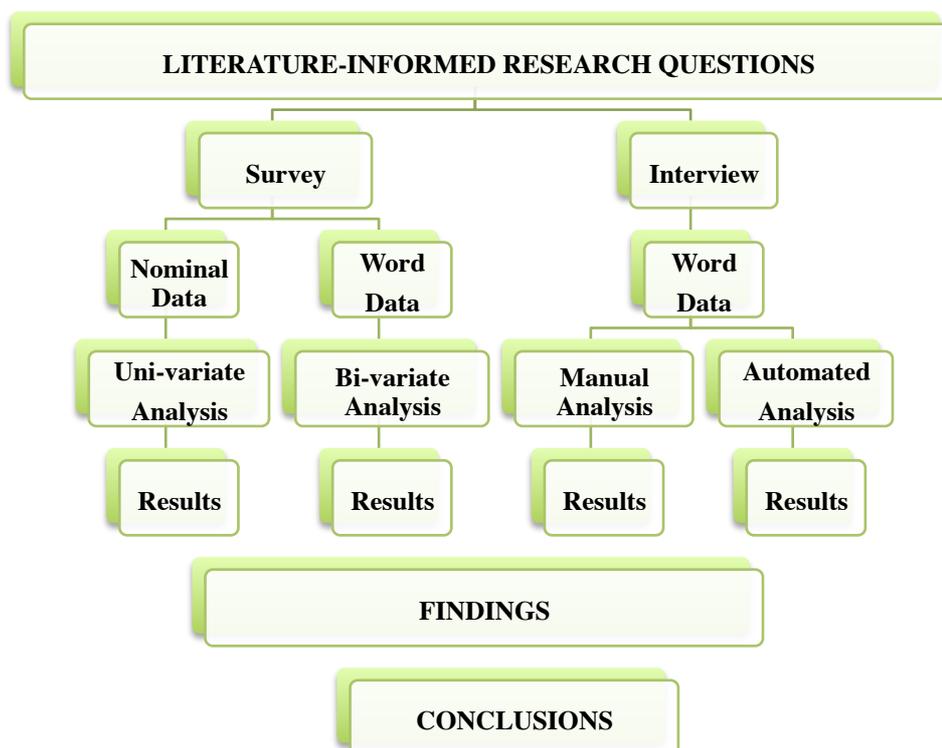
## CHAPTER FOUR

### METHODOLOGY

This chapter describes the methods and procedures employed to conduct the investigation of pre-service teachers' perceptions of preparedness to teach primary school Physical Education. Included in the chapter are five sections describing the *Research Design, Data Collection Instruments and Procedures, Participants, Data Analysis Plan, and, Evaluation of the Research Design.*

#### RESEARCH DESIGN

Two purposes informed the research design. The first purpose was to create a structure to investigate the research questions and the second was to ensure the “trustworthiness” of the study. The final design is shown in Figure 4.1.



*Figure 4.1. Overview of the research design*

Features of this mixed-method design include two methods of data collection, namely survey and interview and concurrent data analysis employing multiple methods. Survey method was employed to collect baseline data and interview

method to access more in-depth data. These data were then analysed using mixed methods before results were triangulated and grouped to describe research findings. Conclusions and implications for the study were drawn from these findings.

### **Research Questions**

Three Research Questions (RQ), were formulated to investigate pre-service teachers' perceptions of preparedness to teach primary school Physical Education. Each question was coded with a numeral corresponding to the order in which the question would be researched. These questions were:

- RQ1: What are the perceptions of preparedness to teach primary school Physical Education, for pre-service generalist teachers undertaking primary teacher education at one university?
- RQ2: What are contributors to pre-service generalist teachers' perceptions of preparedness to teach primary school Physical Education?
- RQ3: Is increasing Primary School Teacher Education-Physical Education (PSTE-PE) identifiable as a strategy to transform pre-service generalist teachers' perceptions of preparedness to teach primary school Physical Education?

The first two questions, namely RQ1 and RQ2, were designed to satisfy the level of uncertainty or ambiguity with existing knowledge about learning-to-teach primary school PE. The third question was informed by Cochran-Smith's (2001) "outcomes question" for teacher education.

### **DATA COLLECTION INSTRUMENTS AND PROCEDURES**

Three researcher-developed instruments were employed to collect data capable of answering the research questions for the study. These instruments were the *Preparation to Teach Physical Education in Primary Schools (PTPEPS) Survey Questionnaire*, the *Visual Language Icon (VLI)*, and the *Interview Guide (IG)*. Background to the development of these instruments may be found in Appendix B. This section of the chapter provides a description for each of these instruments together with procedures employed to collect data.

### PTPEPS Survey Questionnaire

The literature-informed survey questionnaire developed for this study may be found in Appendix C. The survey format consisted of a title page, three sections and a close. The title page situated the survey in the context of the study and ethical research practice. The opening section required participants to volunteer demographic and background information using items utilising forced choice, dichotomous questions and a free response. The second section employed six-point Likert scales to collect participants' level of agreement with statements pertaining to *Personal Experience of School PE and Sport*. Section Three included a combination of item formats to collect data related to *Learning To Teach Primary School PE*. The close provided instructions for the return of the survey with an invitation to participate further in the research.

### Visual Language Icon (VLI)

The VLI was designed by the researcher as an instrument to facilitate the capacity of participants to communicate *levels of preparedness to teach* without employing words or phrases. The idea of including visual tools to enhance the language of inter-personal communication was not new. For example, counsellors commonly include objects, symbols, pictures, or signs in the counselling space to address complex concepts with their clients. The idea of utilising Russian nesting dolls to enable communication and triangulate data during a research interview was new. Essentially, the VLI was designed as a tool to enrich the interviewee's description of *preparedness to teach*.

The VLI instrument shown in Figure 4.2 was constructed using five identically decorated icons. Each icon was different by height and size.



Figure 4.2. Visual Language Icon

Before each interview the researcher arranged the icons on a round table that was accessible to both the researcher and the interviewee. Since interviewer and interviewee were seated beside one another (to create a less threatening posture), the VLI was positioned such that the front face of each icon was clearly visible to the interviewee. As shown in Figure 4.2 the icons were arranged to form a pictogram. Visually, the highest and largest icon was positioned to the left of the pictogram to imply “greatest” preparedness to teach, whilst, the shorter and smaller icon was positioned to the far right of the pictogram to imply “least” preparedness. To ensure a standard approach in data collection procedures this positioning was consistent for all participants.

### Interview Guide (IG)

A literature-informed interview guide was employed to structure and sequence questions for the research interviews. As the guide was constructed specifically to collect data pertaining to the context of pre-service teachers learning to teach Physical Education at a university offering a PE specialization, the guide was named the *Health, Physical Education and Sports Studies (HPESS) Interview Guide*. At the university, the term HPESS identified a curriculum area.

The *HPESS Interview Guide* (IG) featured a variety of question types arranged into opening, body, and closing sections.

- The opening section consisted of one *primary question* designed to introduce the topic of the research, namely primary school PE.
- The body of the IG consisted of four questions. As sequenced in Figure 4.3 the body of the IG employed a *feeling question* (Patton, 1989), *two opinion-value questions* and one descriptive question (Spradley, 1979). Sub-questions were *structural, descriptive questions* designed to enquire how participants organised knowledge of experiences.
- The close utilised a *hypothetical question* that required participants to predict attitudinal or behavioural responses to a plausible scenario.

The guide shown in Figure 4.3 appears to prescribe the exact sequence of questions in advance as for a “standardised open-ended” interview type (Cohen, Manion & Morrison, 2005, p.271). However, because the intent was for the interviewer to

change the sequence of questions to remain “conversational and situational” (Cohen et al., 2005, p.271) the format conforms more to an “interview guide approach.”

**HPESS INTERVIEW GUIDE**

**OPENING**

1. Speaking from your point of view, **what** is primary school Physical Education?

**BODY**

2. How prepared are you **now** to teach primary school Physical Education?
3. What do you believe a teacher needs to **know** to teach primary school Physical Education?
  - a. What opportunities have you had to gain this knowledge?
4. What **skills** do you believe a teacher needs to teach primary school Physical Education?
  - a. What opportunities have you had to gain these skills?
5. Which opportunities have contributed **most** to your preparedness to teach primary school Physical Education?
  - a. Which opportunity during your most recent EDPE unit has contributed most to your preparedness to teach primary school Physical Education?

**CLOSING**

6. After graduation you are posted to a primary school in which the practice of Physical Education is very different to your own. In as much detail as possible:
  - a. Describe what these differences may be.
  - b. What would you do to address this situation?

*Figure 4.3. HPESS Interview Guide*

Procedures employed to collect data with each of these instruments are described under the sub-headings, namely *Survey Procedures* and *Interview Procedures*.

### **Survey Procedures**

For each data collection period, PTPEPS surveys were administered in hardcopy to all pre-service teachers completing EDPE units. Students studying on campus completed and returned surveys during the final lecture or workshop of a unit of study. External students received, by mail, a survey attached to their marked and graded assignment for the unit of study. This procedure was employed to maximise learning time occurring before data collection and guard against any perceived link between involvement in the survey and unit assessment. The survey package included a cover letter (Appendix D), literature-informed survey questionnaire

(Appendix C) and reply paid self-addressed envelope. Both the cover letter and survey informed participants that the research had ethics approval (Appendix E).

### **Interview Procedures**

On receipt of completed surveys, the researcher contacted student volunteers by email using the IP address provided on the survey. Attached to this email was a copy of both the *HPESS Interview Guide* and the *Participants Information Sheet* (Appendix F). The body of the email included an invitation to nominate a date and time for interview and provided instructions for giving consent.

Research interviews involved the researcher and one participant. Face-to-face interviews were conducted with volunteers studying on-campus. The venue was a dedicated study room in the university library chosen for its “student-friendly”, quiet and private location. Volunteers enrolled in EDPE units in the off-campus mode were interviewed by telephone at a pre-arranged time, convenient to the interviewee. Typically, the duration of the interview was between one and two hours. Voice recordings of interviews were collected using a digital audio recorder for Apple iPod (MICROMEMO). Recordings were stored on Apple iTunes and transcribed verbatim by the researcher to a Word MS document for later analysis.

### **PARTICIPANTS**

Participants were volunteers from a population of pre-service teachers at a university who satisfied two requirements. The first requirement was enrolment in a pre-service teacher education degree program designed to qualify primary school classroom teachers. The second requirement was completion of an EDPE unit of study during data collection periods. In 2008, 855 enrolments were registered across fourteen EDPE units. The 2008 academic year was divided into two semesters. During Semester One, total enrolments in EDPE units numbered 462 (342 off-campus and 120 on-campus enrolments). Semester Two enrolments were 393 (351 off-campus and 45 on-campus). A further 129 students enrolled in EDPE941 for Semester One, 2009 were invited to participate in the study to supplement data collected for the same cohort the previous year.

### **Number of Cases**

Cases rather than number of participants are used in the study because volunteers may have participated in more than one of three data collection periods.

Administration of 909 survey questionnaires yielded 400 returns. Of these cases, nineteen volunteered to participate further in the research by interview. Of these, fourteen participated in face-to-face interviews and five in telephone interviews.

Cases across the specialization are shown in Table 4.1, 4.2, and 4.3. Tables provide for each EDPE unit in the data collection period, total enrolment, surveys distributed, surveys returned and percentage return.

Table 4.1.

*Cases in First Data Collection Period (Semester 1, 2008)*

EDPE UNIT	Total Enrolment	Surveys Distributed	Surveys Returned	Percentage Return
EDPE214 *	120	117	98	83.8
EDPE245	127	127	44	34.6
EDPE341	57	45	13	28.9
EDPE941	129	124	48	38.7
TOTAL	462	436	203	46.6

Note: Asterisk refers to units offered on-campus. All other units are off-campus.

Survey return rates shown in Table 4.1 were higher when administered to on-campus as compared to off-campus students. To respect the right of survey recipients not to participate in the study, the strategy of sending follow-up letters to increase response rates was not employed.

Return rates shown in Table 4.2 for off-campus students during the second data collection period were lower when compared to the first data collection period. Perhaps because some students enrolled in two EDPE units in the same semester returned only one survey and others who responded during a previous data collection period may not have returned a further survey.

Table 4.2.

*Cases in Second Data Collection Period (Semester 2, 2008)*

EDPE UNIT	Total Enrolment	Surveys Distributed	Surveys Returned	Percentage Return
EDPE143/243	139	110	24	21.8
EDPE201 *	45	37	36	97.3
EDPE342/442	50	60	6	10.0
EDPE343/443	109	104	10	9.6
EDPE344/444	28	13	2	15.4
EDPE441	29	26	6	23.1
SPECIALIST INTERNS	5	5	5	100.0
TOTAL	398	355	89	25.1

Cases for the third data collection period are shown in Table 4.3. To re-iterate, this data was collected to supplement poor response rates (38.7%) for students completing EDPE941 during the first data collection period.

Table 4.3.

*Cases in Third Data Collection Period (Semester 1, 2009)*

EDPE UNIT	Total Enrolment	Surveys Distributed	Surveys Returned	Percentage Return
EDPE941	129	123	108	87.9
TOTAL	129	123	108	87.9

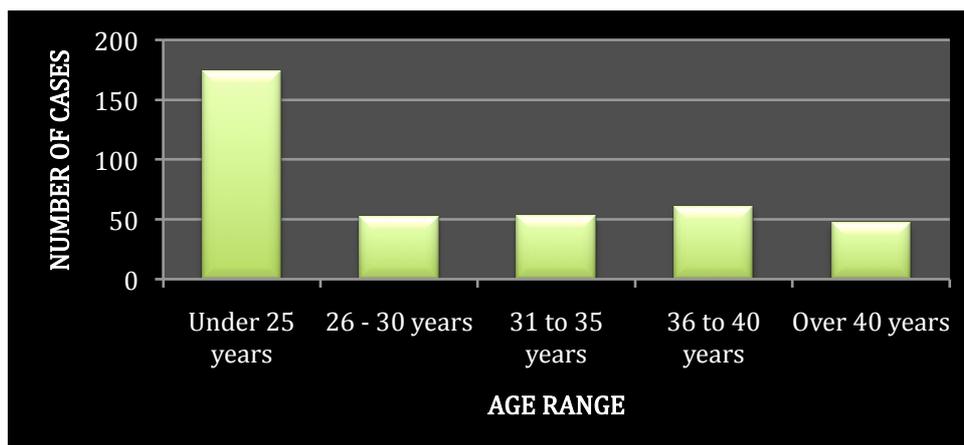
Over three data collection periods, total enrolments in EDPE units numbered 984. Distributed to enrolled student teachers were 909 survey questionnaires. Of these, 400 surveys were returned representing a return rate for surveys distributed of 44.0% and a return rate by total enrolment of 40.7%.

### **Gender**

In this study, 83.1% of cases were female and 16.9% were male. This gender pattern is “fairly” representative of the female gender bias of teachers in Australian primary schools as reported in the Australian Bureau of Statistics census (2005). At census, teachers in Australian primary schools comprised 79.7% female and 20.3% male. This gender pattern is also representative of the gender composition of pre-service teachers in the Teacher Education awards at the university.

### **Age Ranges**

The age range of participants in the study is shown in Figure 4.4. The column graph shows a greater percentage (45.1%) of cases were *Under 25 years* of age. This group consisted of 174 cases typically entering initial teacher education following secondary schooling. At the university, the other four age ranges, were considered to be mature age students (>25 years of age).



*Figure 4.4. Age profile of cases*

### **Award Categories**

Participants in the study were enrolled across three categories of award programs offered at the research site. Of these awards, 203 cases (52.5%) were enrolled in the Bachelor of General Studies/Bachelor of Teaching (B.GS/B.Teach), 161 cases (41.6%) in the Bachelor of Education (Primary) referred to as the B.Ed. (Primary), and 23 cases (5.9%) in other awards.

### **Sampling Methods**

Methods used to sample students for the study prioritised voluntary participation. All students completing one or more EDPE units of study during the data collection period had equal opportunity to complete and return a survey, and, to volunteer to participate further in the study. As such, the sampling plan involved non-probability sampling. To select participants for interview, the method of “stratified sampling” (Cohen et al., 2005, p. 101) was employed. The population of students completing EDPE units were organised into discrete groups by most recently completed unit. A random sample of volunteers from each group was then selected to represent gender patterns of the total population of EDPE students. The size of the sample to be interviewed for each group was determined by the smallest number of volunteers for any one EDPE group. The smallest group was five volunteers who completed the 4-week specialist Physical Education practicum during their mandatory 10-week internship.

### DATA ANALYSIS PLAN

A data analysis plan was created for the empirical phase of the investigation. This plan is found in Table 4.4. Columns of the table identify the analytic phase and associated forms of data. Rows of the table outline different methods for analysis. A feature of the plan found in Table 4.4 is three different data sets analysed using a variety of analytic tools, methods and procedures.

Table 4.4.

#### *Data Analysis Plan for the Study*

Analytic Phase	Nominal Survey Data	Lexical Survey Data	Lexical Interview Data
Phase 1	Uni-variate analysis using SPSS 17 <ul style="list-style-type: none"> <li>Chi-Square Goodness of Fit Test</li> </ul>	Manifest content analysis <ul style="list-style-type: none"> <li>manual</li> </ul>	Manual coding using Colaizzi (1978) framework
Phase 2	Bi-variate analysis using SPSS 17 <ul style="list-style-type: none"> <li>Chi-Square Test for Independence</li> </ul>	Manifest content analysis <ul style="list-style-type: none"> <li>Automated</li> </ul>	Automated analysis using Leximancer Version 3.07
Output from triangulating Phase 1 and 2	Statistical description of data <ul style="list-style-type: none"> <li>Frequency and frequency tables for each survey item</li> <li>Association between frequency distributions for survey items in cross tabulation</li> </ul>	Statistical description of data <ul style="list-style-type: none"> <li>Frequency of occurrence</li> </ul> Thematic description of data <ul style="list-style-type: none"> <li>Concept maps and statistics</li> </ul>	Thematic description of data <ul style="list-style-type: none"> <li>Fundamental structures</li> <li>Semantic patterns</li> </ul>
Phase 3	Reporting of Research Results (RR) from Phase 1 and Phase 2		

### Analytic Tools

Four tools were employed during the analytic phases of the data analysis plan shown in Table 4.4. These tools were the Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975) SPSS 17, the *Find* command of Microsoft Office Word software, Colaizzi's (1978) seven-step framework and the text-mining software system Leximancer 3.07 (Smith, 2000). These tools and their functions were

- SPSS 17 – transform coded data to frequency, cumulative frequency and contingency tables and calculate Chi-square, Phi and Cramer V statistics;
- *Find* command – calculate frequency of words or phrases;
- Colaizzi (1978) procedures – reduce interview data to a *fundamental structure*; and
- Leximancer 3.07 (Smith, 2000) – transform lexical co-occurrence information from participants spoken and written responses into semantic patterns.

### **Analytic Methods and Procedures**

Four methods feature in the data analysis plan, namely *Uni-variate analysis*, *Bi-variate analysis*, *Manifest Content Analysis*, and Colaizzi's (1978) *Seven-step Framework*. Procedures employed for each of these methods are described next.

#### ***Uni-variate Analysis***

Survey data collected using rating scales was “post-coded” through assignment of numerals to each point on the Likert scale. SPSS was employed to transform coded data to simple frequency and cumulative frequency tables. A hypothesis test, namely Chi-Square Goodness-Of-Fit Test, was used to investigate differences between observed frequencies and expected frequencies if there was an equal probability of respondents choosing each point of the Likert scale. When the null hypothesis describing equal probability was rejected, the survey item was considered to be a valid measure of the item variable.

#### ***Bi-variate Analysis***

A sequential nine-step procedure was needed for bi-variate analysis of nominal survey data. These procedures involved:

1. Running survey data through SPSS 17 software to generate contingency tables for survey items considered valid measures of item variables. Contingency tables arranged item variables in cross-tabulation with frequency distributions for the item *I feel prepared to teach primary school PE*.
2. Transforming categorical data to satisfy conditions to apply a Chi-Square Test for Independence. Conditions required that “no more than 20 per cent

of cells in the contingency table had expected values less than five” and “no cell had expected values less than one” (Connolly, 2007, p.180).

3. Generating a Pearson Chi-square statistic (Pearson, 1900) for 2-by-2 cross tabulations. The null hypothesis was retained if chi-square had a p value  $> 0.05$ . The null hypothesis was rejected when p value was  $< 0.05$  and the alternative hypothesis retained. The alternative hypothesis stated that the frequency distribution of responses observed from one survey item were not independent of the distribution of frequency responses observed using the other survey item.
4. Calculating the relationship between row and column variables of a contingency table using Phi as a measure of the strength of association (ES).
5. Interpreting Phi using standards proposed by Cohen (1988). Standards for interpreting Phi are shown in Table 4.5.

Table 4.5.

*Standards for Interpreting Phi*

0.10 < Phi < 0.30	Small effect
0.30 < Phi < 0.50	Medium effect
Phi > 0.50	Large effect

6. Generating Cramer V statistic to measure strength of relationship when the matrix for cross-tabulation exceeded a 2-by-2 matrix.
7. Interpreting Cramer V using standards proposed by Cohen (1988) as found in Table 4.6.

Table 4.6.

*Standards for Interpreting Cramer's V*

For $df = 2$	0.07 < V < 0.21	Small effect
	0.21 < V < 0.35	Medium effect
	V > 0.35	Large effect
For $df = 3$	0.06 < V < 0.17	Small effect
	0.17 < V < 0.29	Medium effect
	V > 0.29	Large effect

### ***Manifest Content Analysis***

Manifest content analysis is a technique employed to measure the “elements that are physically present and countable” (Gray & Densten, 1988, p.420) in communication (Berelson, 1952). This technique was employed in this study to identify elements in word data collected from free-response survey items. This procedure involved counting the frequency of words or phrases “physically present and accountable” (Berg, 1989, p.107) using the *Find* command of Microsoft Office Word software.

### ***Colaizzi’s (1978) Seven-step Framework***

Colaizzi’s (1978) analytic framework was selected from procedures described by Giorgi (1985), Paterson and Zderad (1976), Spiegelberg (1982), Streubert (1991) and van Kaam (1959). The preferred framework consisted of a seven-step procedure that required the researcher to:

1. Repeatedly read interview transcripts or written survey free responses to gain a “*sense of the whole*” (Giorgia, 1985). In other words, gain a general sense of the experience of phenomenon from the point of view of participants.
2. Scrutinise every sentence of the interview transcript or survey free response to “*extract significant statements*”.
3. Formulate meaning for each significant statement.
4. Aggregate “*formulated meanings*” into “*cluster of themes*”.
5. Write “*exhaustive descriptions*” for each theme cluster.
6. Validate descriptions with participants by way of member checks.
7. Identify “*fundamental structures*” and relationship between structures.

Procedural steps were applied firstly to each transcript from individual participants (see example in Appendix H). Subsequently, procedures were applied across all nineteen transcripts. Outcomes from this analysis were theme clusters, exhaustive descriptions and fundamental structures.

### ***Text Mining of Word Data – Leximancer***

The software system Leximancer version 3.07 (Smith, 2000) was used to identify semantic patterns in data collected from the interview question about preparedness. Analysis focused on three questions, namely: What is the most important theme in

the data? What concepts are discussed in each theme? and, What is the nature of the relationship between predominating themes and other themes? Procedures used to answer these questions involved:

1. Merging responses from nineteen participants to the question pertaining to preparedness into a single Word file.
2. Visually inspecting the Word file to identify “nonsense concepts” that may not be understood by the software tool. Examples include verbatim “K-6” that was reworded as “Kindergarten to Year Six,” “EDPE214” was reworded as “internal curriculum unit of study” and, colloquial terms such as “prac” replaced with “practicum.” Different words and phrases adopted by interviewees to refer to the icons of the VLI were replaced with the word “icon”. The concept editing function of Leximancer was used to interpret the terms “PE” and “Phys. Ed” as “Physical Education.”
3. Running the analysis.
4. Generating a concept identification list.
5. Generating a concept map showing key themes in the data.
6. Generating data logs for co-occurring themes.
7. Examining themes and relationship between themes.

When compared to manual methods of analysis, this automated system facilitated identification of semantic patterns from interview and survey word data with minimal interaction of the researcher with the data.

### **EVALUATION OF THE RESEARCH DESIGN**

The mixed-method research design was selected specifically to optimize the “trustworthiness” of results. However, threats that may compromise the design and hence the interpretation of the data, needed to be identified and systematically addressed. Steps undertaken to reduce potential threats are described for both the *Cross-sectional* and *Interpretive* features of the design.

#### **Cross-sectional**

Cross-sectional design was preferred as a means to describe, at one point of time, “snapshots” of pre-service generalist teachers’ perceptions of preparedness to teach. This “snapshot” enabled description for both the cohort of pre-service teachers

studying tertiary Physical Education and stratified sub-groups of this cohort by PE specialization. Two weaknesses of cross-sectional studies are acknowledged. The first weakness is the inability of this research design to support analysis of causal relationships. The second weakness is that sampling from the first data collection period was not comparable to that of the second data collection period because the samples were different. To address these potential threats, data analysis is oriented to showing association between variables as opposed to causation.

### **Interpretive**

This study was conducted in the interpretive paradigm to “understand the subjective world of human experience” (Cohen et al., 2005, p. 22) at one time and in one place through “the eyes of participants rather than the researcher”. A potential threat to this position is researcher bias. To address this threat, the research design utilized several strategies including mixed methods of data collection and analysis, triangulation, and careful audit trails of research decisions. Further, theory generated from this investigation makes no claim to be universal. Rather, theoretical descriptions are reported in the context and situation from which the data were collected.

### **CONCLUSION**

This chapter has described the methodology employed to investigate pre-service generalist teachers’ perceptions of preparedness to teach Physical Education at the university. Features of this methodology were specifically designed to answer the research questions formulated for the study and optimize the trustworthiness of the findings.

The methodology adopts a mixed-method, cross-sectional research design to address three research questions. Data were collected from pre-service teachers at one university using researcher-developed data collection instruments. The data analysis plan features three different data sets analysed using multiple methods. Triangulation of results within and across research questions enables description of research findings.

The next chapter is the first of three to present results and discussions pertaining to the study’s research questions. The first of these chapters, namely, Chapter Five

addresses first research question related to *Perceptions of Preparedness to Teach Physical Education*.