Exploring Professional Identity: Narrative Constructions of becoming and being a Teacher of Design and Technology Education

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Abstract
This thesis examined the development of professional identity. More specifically, it identified the influences that serve to shape the perceptions of professional identity of beginning Design and Technology teachers. The study within the thesis employed a qualitative, narrative, collective case study approach to capture the ways in which beginning Design and Technology teachers’ perceptions of professional identity are constructed and reconstructed as they make the transition from final-year university pre-service teachers to first-year in-service teachers. The study examined the influences that shaped these constructions during this period and, in so doing, identified the factors that serve to support or impede these constructions.

During the period in which this thesis was undertaken, the area of Design and Technology education was undergoing significant transition (Williams 2002, 2006). The educational and socio-cultural contexts that frame this research are currently being strongly influenced by political, educational, economic and industrial agendas (Barlow 2012). Australia is not alone in experiencing the implications of these agendas, as Barlex (2011), Atkinson (2012), Benson (2012) and Furlong (2013) have also identified issues of limited funding, subject integration and the devaluing of the subject at an international level. Collectively, these issues create a complex and dynamic setting in which beginning teachers engage in the process of becoming and being teachers.

This study is grounded in a postmodern framework (Erikson 1968, 1989; Foucault 1990; Gee 2001) based on the belief that identity development is far from being a fixed, stable or linear process (Britzman 1991, 2003; Wenger 1998; Bullough 1999, 2005; Flores & Day 2006). The work of Foucault (1990) also resonates with this study. Foucault argued that identity only has meaning within a chain of relationships, and further argued that there is no fixed point of reference for an identity. Foucault termed this the arts of self (Foucault 1990, p. 26) as he referred to identity as a work of art in which one consciously or unconsciously constructs one’s self into who one wants to be through past and current experiences, social influences and interactions. The close connection between identity, interaction and practice articulated by Wenger (1998) in his examination of communities of practice also guides this research.
The research was conducted in two stages; the university stage and the in-school stage. The participants for Stage 1 of the study were 20 beginning Design and Technology teachers who had recently completed their final year of a four-year undergraduate teaching program with a teaching major in the field of Design and Technology Education, including food and textile technologies (Home Economics). The first stage of the study was conducted on the campus of the university in which the participants had recently completed their undergraduate study. The participants for Stage 2 of the study were a group of 10 in-service teachers selected from the 20 participants from Stage 1. The setting for the second stage of this study was the school in which participants had commenced teaching.

Data were collected over a 15-month period using a questionnaire that included open-ended text response questions, a teacher professional knowledge framework, three semi-structured interviews and reflective e-journal entries. The type of data analysis adopted for this collective case study was narrative analysis (Yin 1994, 2003). As a consequence of adopting a narrative case study approach, it was possible to adopt both a micro- and macro-analysis of the data (Creswell 2002). That is, while the intent of the analysis was to gain an insight into the experiences of individual participants within the particular case, commonalities or differences in the experiences could also be identified across cases.

Analysis of the data illuminated five major themes as being key factors in shaping beginning Design and Technology teachers’ professional identity. These themes were:

1. The Past Shapes the Future – Personal and Professional Histories
2. Alignment and Visibility of Design and Technology Subject Content and Pedagogical Knowledge
3. The Impact of the Teacher Education program
4. Collaboration and Mentoring in School Cultures
5. Pushing the Boundaries – Opportunities to ‘Self-Author’
This thesis makes a significant contribution to research in a number of ways. Firstly, it acknowledges and addresses an identified gap in the research through providing an in-depth study that has examined the development of, and the influences that shaped, the professional identity of pre-service Design and Technology teachers as they made the transition into teaching. Secondly, it provides insights into how beginning teachers of Design and Technology respond to the significant transitionary nature and uncertainty of curriculum changes in the learning area. Thirdly, it investigates the concept of self-authoring (Sloan 2006; Soreide 2006) and the influence it can have on the development of professional identity.
Candidate’s Declaration

I declare that:

“This work has not been previously submitted for a degree or diploma in any university. To the best of my knowledge and belief, this thesis contains no material previously published or written by another person except where due reference is made in the thesis itself”.

Signed:

Date: 28/7/13
Chapter 1
Introduction

1.1 Introduction

Learning to teach, like teaching itself, is always a process of becoming: a time of formation and transformation, of scrutiny into what one is doing, and who one can become.

(Britzman 1991, p. 8)

This thesis examines the development of professional identity. More specifically, it identifies the influences that serve to shape the perceptions of professional identity of beginning Design and Technology teachers. When pre-service teachers commence and complete their university study, they hold varied personal narratives about their perceived professional identity as educators (Lortie 1975; Knowles 1992; Groundwater-Smith, Mitchell & Mockler 2007; Smith 2007). These perceptions have been shaped by many constructs including: personal and professional histories (Kelchtermans 1993; Coldron & Smith 1999; Day Kington, Stobart & Sammons 2006; Furlong 2013); the content of university courses (Zuga 1991; Smith 2007); school and community-based experiences (Lortie 1975; Applebee 1989); and interactions and conversations with peers, university and school staff, friends and family.

Once pre-service teachers transition into their teaching roles, the community of practice (Wenger 1998) widens and these perceptions are influenced further by the diversity and complexities of the school context itself (MacLure 1993; Coldron & Smith 1999). In exploring the influences that shape these perceptions of identity, the study also investigates how these perceptions serve to shape beginning teachers’ understandings and interpretation of the Design and Technology learning area, their pedagogical practices and their understanding of themselves as teachers.

The paradigms (Lincoln & Guba 2000) and world views (Creswell 2007, 2009) that guide this research are based on the theories of social constructivism (Lincoln & Guba 2000; Neuman 2000). Within those theories, the beginning teachers in this
study are viewed as seeking to understand the world in which they work, and the individually constructed meanings which they make are seen to be subjective. That is to say, they are related to individual experiences in a particular context and formed through a process of interaction with others as well as *through the historical and social norms that operate in one’s life* (Creswell 2007, p. 8).

In this study, identity is not viewed as a *fixed product* of the individual; instead, it is be viewed as being a *socialised and socialising process* in which identities can be accepted as well as re-shaped (Furlong 2013, p. 68). Thus, identity formation is viewed as a dual process, involving both identification and negotiability (Wenger 1998). Wenger argued that: *[w]e cannot become humans by ourselves* (Wenger 1998, p. 146). Similarly, it is argued in this thesis that we cannot become teachers by ourselves.

This research also contains a particular action agenda (Creswell 2007, 2009) in that it seeks to explore the opportunities that participants in the study have to **self-author** (Sloan 2006; Soreide 2006). Self-authoring is defined in this thesis as indicating participants’ ability to be active agents in shaping their own meanings of professional identity, that is, to have the opportunity to be the teacher that they want to be and to teach in ways that they want to teach. As a result, this research also adopts an advocacy or participatory world view (Creswell 2007, 2009) in that, the study recognise[s] that research inquiry is also linked to the politics and political agendas within educational and societal contexts. Thus, this thesis is also interpretive in nature, in that it is characterised by concern for the individual and, more specifically, the interaction between the individual and their context.

Connelly and Clandinin (1999) suggested that identities are created through the stories we live by, and for this research it is the interconnectedness of experiences, interactions and knowledge that merges to become the beginning teachers’ perceived professional identity. Therefore, this research is situated in the ontology of experience (Clandinin 2007) and aims to capture the stories or narratives that beginning teachers not only live by but by which they teach. It is these stories that provide the researcher with an insight into an identity that is able to provide beginning Design and
Technology teachers with a sense of belonging and professional location (Weeks 1990).

The rich descriptions that are characteristic of qualitative research are crucial to this study of the beginning teachers’ thinking and behaviour (Connelly & Clandinin 1987, 1999; Carter 1993; Clandinin & Connell, 1995, 1998). Narrative inquiry presented the researcher with an interpretive reconstruction of parts of a person’s life (Connelly & Clandinin 1987, p. 134). The use of a collective case (Yin 1994; Stake 1995, 1998) enabled an intensive, holistic description and analysis of a bounded phenomenon (Merriam 1988, p. xiv) to illustrate the complexities of the phenomenon of teacher professional identity for the individual as well as for the collective.

By exploring beginning teachers’ insights, perspectives and responses through narratives over an extended period and at specific points in time, that is, when exiting university, at six weeks, six months and after one year of teaching, responses could be connected to immediate experiences. The longitudinal nature of the study also enabled changes in perceptions to be witnessed and explored further.

In order to discover and later interpret these narratives, a range of interconnected data collection methods were deployed. These were: semi-structured interviews, to provide the freedom to respond to the situation at hand, to the emerging worldview of the respondent, and to new ideas on the topic (Merriam 1998, p. 75); focus groups to facilitate discussion to provide points of commonality and agreement or to raise issues not previously considered by the researcher; and e-journals to provide valuable insights into the influences that shape and inform the perceptions that participants hold of their professional identity.

1.2 Significance of the study
A number of articles have been written about the place that Design and Technology education should play in meeting the needs of a technologically literate society (see e.g. Kimbell & Perry 2001; Martin 2008; Banks 2011, Barlex 2011); however, there is limited research about the teachers who teach Design and Technology education and, more specifically, about the influences that shape their beliefs, values, understanding and knowledge of the subject.
By investigating the influences that shape beginning Design and Technology teachers’ professional identity, this research has addressed aspects of this gap in knowledge.

Thus, this research is significant in a number of ways. Firstly, there are studies examining experienced secondary teachers’ current perceptions of their professional identity (Beijaard, Verloop & Vermunt 2000) and of the metaphors that beginning teachers use to describe their professional identities (Thomas & Beauchamp 2011); personal accounts of identity construction (Armour & Fernandez-Balboa 2001); and studies which examine the transition of professional identity throughout university study (Pavlova & Smith 2003; Furlong 2013). However, no in-depth studies were identified that examine the development and the influences that shape the professional identity of pre-service Design and Technology teachers as they make the transition into teaching.

Secondly, the area of Design and Technology is in a period of significant curriculum transition (Williams 2002) and understanding the ways in which beginning teachers respond to these changes represents a significant contribution to the knowledge. Reynolds (1996), Coldron and Smith (1999) and Fetherson (2006) argued that beginning teachers can be confronted with in-service teachers who are not only reluctant to change, but who are not always supportive of those who want to embrace new curriculum and new technologies to move forward. This reticence may present a tension for early career Design and Technology teachers who, through their recent university study, have been encouraged to implement curriculum through a holistic, student-centred pedagogy. The lack of literature that explores this possible tension invites a study to investigate if early beginning teachers in the field of Design and Technology education are able to exercise personal control in their thinking and their actions, that is, to self-author (Sloan 2006; Soreide 2006) as they make the transition into professional practice.

Thirdly, Beauchamp and Thomas (2009) argued that making the connection between what is learned in teacher education programs and what happens in schools can better prepare beginning teachers for any disjunctions that they may confront once they commence teaching.
As a consequence, university teacher education programs should be viewed as a pivotal resource in constructing one’s self as an educator. While the research of Coldron and Smith (1999) and Lamote and Engels (2010) validated this claim, there is limited research into the role that teacher education programs play in preparing specialist teachers of Design and Technology education. This research addresses this gap.

Finally, Pietsch and Williamson’s (2010) research identified that the tenure of employment into which beginning teachers commence their professional career has a significant effect on: their ability to develop their professional knowledge, maintain their commitment to the profession and their self-confidence and self-image as teachers. There appears to be no research that specifically investigates the relationship between tenure of employment and the development of professional identity for beginning Design and Technology teachers. This research contributes to this gap in knowledge.

1.3 Research questions
The aim of the research was to investigate the question:

What are the influences that shape beginning Design and Technology teachers’ professional identities?

Specifically, the study aimed to investigate the following research questions:

- What are the perceptions of professional identity for beginning Design and Technology teachers as they leave university?
- What are the factors that have shaped professional identity to this point?
- Does this identity change throughout the first year of teaching?
- If so, what are the influences that cause this change during this time?

1.4 Introducing the contexts that frame this research
To understand the significance and context of this study more deeply, it is necessary to understand the place of research in Design and Technology education, as well as the specific educational and socio-cultural contexts in which this study commenced. The section that follows explores the place of research in the discipline.
1.4.1 The place of research in Design and Technology education

Studies that have explored the place of research in Design and Technology teacher education are limited (Martin 2008). Middleton (2006) argued that 20 years ago much of the research in the field was highly quantitative, highly descriptive or both. As Middleton argued, this was an outcome of the need for researchers at the time to achieve academic credibility and respectability through replicating the research methods of science. In more recent years, much of the call for scholarly research in the discipline (Zuga 1991; Wajcman 1992; Custer 1997; Martin 2008) has been directed at the teaching profession itself in an effort to provide statistical evidence of the impact of their teaching, student learning and program effectiveness (Martin 2008). The literature has argued that research methods employed in more recent times continues to evolve in ways that are better suited to research in the field, that is, in ways that can inform and improve both the understanding and the practice of educators.

Characteristics of more recent methodologies, suggested Middleton (2006), have enabled interpretation rather than simply description. The outcome of this is that:

*Design and Technology researchers are making greater use of research findings to inform their own research, and are drawing on research methods from other disciplines as well as utilizing theory to provide more relevant frameworks for analysing research.*

(Middleton 2006, p. 56)

However, little attention has been paid to research in the field at a doctoral level: it is important to acknowledge that in Australia, the first PhD was awarded relatively recently in the early 1990s, a reflection of the emergent nature of doctoral level research. Wajcman recognised this and argued that:

*It should be abundantly clear that a wide-ranging research endeavour is needed if technology education is to be recognised as a bona fide academic discipline and an important curriculum.*

(Wajcman1992, p. 27)
It has been important to develop and adopt a research method that would not only provide validity to this specific study but also provide a rich and detailed insight into a methodology that contributes to a rigorous researched understanding of Design and Technology education generally.

1.4.2 The Design and Technology teacher education program

The Bachelor of Education, Design and Technology Education program in which participants of this study were enrolled is one of only three programs in Australia that offer a four-year undergraduate teacher education program in Design and Technology education. The four-year undergraduate program was re-introduced in 2004 after a 10-year period during which time the university offered a two-year postgraduate program. The university continues to offer a two-year Master’s in Teaching degree with a Design and Technology specialisation.

The re-introduction of a four-year program was welcomed by both industry, educational partners and associated professional associations such as the Design and Technology Teachers Association of South Australia (DATTASA), as a means to address an identified future teacher shortage. Additionally, the four-year program was viewed by these partners as providing graduates with the diversity and breadth of subject content knowledge to teach both the generalist Design and Technology subjects offered to Year 8-10 students, Vocational Educational (VET) programs and the South Australian Certificate of Education (SACE) Certificate 1 and 2 offered at senior levels of secondary schooling.

The structure of the current Bachelor of Education, Design and Technology program offers a core of curriculum-specific courses, taught predominantly by practising Design and Technology teachers who had been identified as demonstrating best practice; a suite of five materials-based courses taught through Technical and Further Education (TAFE); education core courses offered to all education students studying courses from early childhood through to adult education; and four professional experience courses, including a placement in a primary school setting.
The program is based on the university’s School of Education’s set of eight shared principles for teacher education. This comprises developing professional knowledge, competence and learning; developing the ability to critically reflect; and developing understanding and demonstrating engagement, social justice, sustainability and commitment. The program continues to grow in student numbers, with 240 students enrolled in 2012. The program has a 100% employment rate for graduates with teaching opportunities provided locally, nationally and internationally.

1.4.3 Teaching Design and Technology education in an Australian context

Subject content knowledge and pedagogy in Design and Technology education in Australian schools is currently being strongly influenced by political, economic and industrial agendas (Barlow 2012). Australia is not alone in experiencing the implications of these agendas. Atkinson (2012), Benson (2012) and Furlong (2013) also identified issues of limited funding, subject integration and the devaluing of the subject at an international level. In Australia, these agendas view Design and Technology education as a means to address rapidly changing global and local economies (Webberly 2003, Grimmett 2008). The influences of economic rationalists and professional technologists (Layton 1994) are currently dominating the educational landscape as ‘Trade Training Centres’ in schools, ‘Vocational Education and Training’ and ‘Engineering Pathways’ are developed to ensure that students leave school with the skills to earn. Indeed, ‘Learn to Earn’ has become the central topic of many current educational debates (Department of Education, Employment and Workplace Relations 2008). The consequence is that the focus of Design and Technology education has narrowed from providing school students with the opportunity to develop a holistic understanding of the social, environmental and economic implications of technology (MacGregor 2009) and thus to become technologically literate citizens, to providing a trained workforce to work in trade-related fields.

Throughout Australia, the field of Design and Technology education is continuing to be involved in a process of paradigm change (Smith 2003). Central to this change in South Australian secondary schools has been the introduction of curriculum policy in 2001, the South Australian Curriculum, Standards and Accountability (SACSA)
framework (DETE 2001). While this curriculum has been instrumental in shaping the focus of South Australian university programs, it has not been enthusiastically embraced by all in-service teachers. Rust (1994) and Flores and Day (2006) argued that beginning teachers are strongly affected by the conditions of the workplace and most particularly by the climate of acceptance established by the school leadership team and workplace colleagues. In view of the resistance from in-service teachers to the identified paradigm change (Smith 2003), it is important to study the impact that this resistance has on shaping the professional identity of beginning Design and Technology teachers.

1.5 Structure of the thesis

This chapter presents an introduction to, and rationale for, the thesis. It introduces the aims, research questions and the significance of this thesis. The chapter also provides an overview of the context that serves to inform this study.

Chapter 2 reviews the current literature about identity theory and teacher professional identity. The chapter commences with a review of theories of identity and identity formation as well as an extensive examination of the research associated specifically with teacher professional identity.

Chapter 3 describes and justifies the research methodology and research design employed in the study. The chapter provides reasons for the adoption of specific methodologies, participants, data sources and strategies for collecting data. This chapter also details the processes of data collation and analysis, and the measures taken to ensure trustworthiness, credibility and an ethical stance towards participants. It concludes by discussing the limitations of the study.

Chapter 4, the first of the analysis chapters, presents the findings of the university phase of the study. Drawing on the findings from the teacher questionnaire and focus group discussions, this chapter details participants’ perceptions of their professional identity as they left the university, the factors that participants believed had shaped their professional identity to that point as well as the factors they believed would continue to influence this perception once they commenced teaching.
Chapter 5 is the first of the in-school analysis chapters and introduces case study participants. The tensions, challenges and emotions of the first six weeks of teaching are identified, as revealed through e-journal entries and the first interview. The contexts in which participants commenced teaching are described and significant markers of transition into the role of teacher are highlighted.

Chapter 6 provides a broader analysis across participants’ re-told narratives, through identifying themes, patterns, commonalities and disjunctions. This chapter draws on the responses of participants to the questions posed in the second interview to provide a more collective account of the challenges and tensions, as well as the successes of the first six months of teaching. Chapter 6 also analyses the data to present evidence of participants’ opportunity to self-author to determine if participants are able to integrate their own identity into their teaching role and to actively pursue the professional goals that they valued.

Chapter 7, the final analysis chapter, provides a reflective comparison on what participants initially believed could be the influences in shaping their professional identity with what became the reality after a year of teaching. Chapter 7 provides an analysis of the final interviews held in Term 4 and of those e-journal entries received from the end of Term 2 until the last interview.

Chapter 8 provides an overview of the findings of the thesis, and revisits the significance of the study with recommendations for further research.
Chapter 2
Review of the Literature: Identity and Teacher Professional Identity

2.1 Introduction

Chapter 1 provided an introduction to, and a rationale for, the research focus on the influences that shape beginning Design and Technology teachers’ professional identity. This chapter commences with a review of theories of identity and identity formation and is followed by a more extensive examination of the research associated specifically with teacher professional identity. The chapter argues that to define identity with conciseness is both challenging and complex and, as a consequence, the review of the literature provides a theoretical framework for exploring identity which highlights its relational, dynamic and multifaceted nature. The narrative rendering of identity (Connelly & Clandinin 1987, 1999; Clandinin 1992, 1993, 2007; Clandinin & Connelly 1996, 1998) is also explored in this chapter as a prelude to examining the identity transition of participants through the stories they tell and live by (Clandinin 2007).

This study is grounded in a postmodern framework (Erikson 1968, 1989; Foucault 1990; Gee 2000) based on the belief that identity development is far from being a fixed, stable or linear process (Britzman 1991, 2003; Wenger 1998; Bullough 1999, 2005; Flores & Day 2006). In this study, identity is viewed as being layered, with the self of personal identity providing continuity albeit a dynamic continuity that sits within a range of situational identities or personas associated with teaching (Bullough 1999, 2005). As Bullough (1999, p. 7) argued: *one’s personal identity persists behind the publicly presented repertoire of one’s persona* and it is the context, both social and professional, that shapes the persona that is on view at any given time. This was an approach that allowed the researcher to describe how participants in this study have developed and continue to develop themselves through time and in different contexts but, at the same time, still act as unique individuals who are able to demonstrate agency. That is to say, they were able to actively pursue the professional goals that they valued (Day et al. 2006) to become the teachers they wanted to be.
This chapter highlights the diversity of ways in which to define professional identity with reference being made to images of self and the teacher’s roles and, more specifically, as a resource that people use to explain, justify and make sense of themselves in relation to others (Beauchamp & Thomas 2009, p. 175). The concept of professional identity in this study is related to beginning teachers’ self-concept which is composed of both how they see themselves and how they perceive that others see them in their teaching roles. Nias (1989) and Knowles (1992) argued that it is these concepts that strongly determine the way in which beginning teachers teach and the way in which they continue to develop as teachers. This study draws on the literature to argue further that teacher professional identity stands at the core of the teaching profession in that it provides a framework for teachers to construct their own ideas of how to be, how to act and how to understand their work and their place in society (Beijaard, Meijer & Verloop 2004; Sachs 2005; Beauchamp & Thomas 2009).

In this section of the chapter, the study draws extensively on the work of Britzman (1991, 2003), Alsup (2006) and Beijaard, Meijer and Verloop (2004) who, in researching the development of professional identity, concluded that emotion, commitment and courage were important features of teaching. In the face of changing political agendas, an ageing teaching force and new directions in Design and Technology curriculum, beginning to teach for the beginning teachers could be viewed as a time of emotion, challenge and tension.

2.2 Exploring identity theory

Identity, as a concept, has been explored across a range of theoretical disciplines such as social anthropology (Holland, Lachicotte, Skinner & Cain 1998); philosophy (Mead 1934); and psychology (Erikson 1950, 1959, 1968, 1980). The question of “what is identity?” has been debated in the social sciences literature for over 50 years ever since Erikson (1968, 1980) drew on the work of Freud (1930–1965) to argue that identity is the coherent picture one shows both to oneself and to the outside world (Erikson 1980, cited in Schwartz 2001, p. 8). Erikson postulated that this coherent picture represents who one is and that, through an Eriksonian framework, this picture can be delineated at three levels:
- Ego identity – the most basic and fundamental beliefs about one’s self, very private, possibly unconscious and internalised from parents. Erickson deemed this aspect of identity as consistent and resistant to change.
- Personal identity – the goals, values and beliefs one shows to the world. It is this aspect of identity that Erikson believed distinguished one person from another.
- Social identity – a sense of group identity, the consolidation of aspects that have been integrated into one’s ‘sense of self’ from the group to which one belongs.


Erikson’s framework for identity was multidimensional and extensive in its scope. However, central to definitions of identity at this time were the terms, ‘the sense of self’ and ‘one’s self-concept’. Self was positioned in these definitions as a singular, unified and stable core (Erikson 1968, 1980). The notion of ego identity was viewed as something well-defined about oneself, fixed and unchanging, something inside of us like the kernel of a nut (Currie 1998, p. 20). It was argued in this study that a traditional notion of ego identity as being coherent or consistent is too restrictive: the study alternatively argued that all aspects of one’s identity, including personal and social, change over time, through experiences and interaction with others. This study argued further that identity is in a constant state of formation and transformation in response to external factors and to internal dialogue as one asks oneself, “Who am I?” and for the context of this research, “Who do I want to be as a teacher?” and more specifically, “Am I able to be who I want to be in the role of teacher?”

2.2.1 Identity as a relational phenomenon

Current research (Gee 2001; Soreide 2006; Watson 2006; Cohen 2008) argued that identity can be described in terms of a sense of self; however, it also argued that identity is relational, to do with recognition of sameness and difference between ourselves and others. Identity is not viewed as something that is fixed or unchanging. It is not a product that one possesses, but is shaped as one progresses through life (Erikson 1968). Informed by the work of Foucault (1990), this view argued that
identity only has meaning within a chain of relationships, and argued further that there is no fixed point of reference for an identity.

Foucault termed this *the arts of self* (Foucault 1990, p. 26) as he referred to identity as a work of art where one consciously or unconsciously constructs one’s self into who one wants to be through past and current experiences, social influences and interactions, coupled with an understanding of one’s self through reflection. Directly associated with the relational nature of identity formation is the concept of **symbolic interactionism** (O’Connor & Scanlon 2005; Cohen 2008). Symbolic interactionism is based on an assertion that individuals act according to their interpretation of the meaning of their world. The concept is also underpinned by the belief that one has multiple selves and that one’s self perception is shaped and developed through social interaction with both the familiar and unfamiliar. The result is that one may act and react differently in and within different social and professional situations. As Murphy stated *we are inevitably multiple selves depending on a range and variety of contexts we inhabit, each of which calls for a different self* (Murphy 1989, p. 116).

Thus, it can be argued that individuals become who they are because of what they do. For instance, a teacher may adopt a teacher persona or situated identity that provides a sense of affiliation or sameness. The close connection between identity, interaction and practice was also articulated by Wenger (1998) in his examination of communities of practice. Wenger argued that identity is produced as a lived experience of participation within specific communities, through engagement with members of that community, acquiring competence in it, taking on its perspectives and aligning oneself with it. Wenger also emphasised that individuals are members of multiple communities of practice, with each community contributing varying degrees of influence and significance at any given time.

The research thus far has highlighted the transitional nature of identity and its direct association with context and interaction within that context. The perspectives that follow provide a picture of the dynamic nature of identity construction.
2.2.2 Identity as a dynamic process

A postmodernist view of identity recognises the impact of rapid social change and the diversity of people’s lives in creating and recreating their individual identities. As Watson (2006, p. 525) argued: [i]t is our relationships to the world and other people, our choices, practices and language that constantly creates, constructs and reconstructs our identity. Watson’s approach to identity formation recognised that identity is dynamic, that is, identity is ever changing in response to experiences and interaction with others. Wenger (1998) argued further that as one goes through experiences and interactions with others, our identities form trajectories. When using the term trajectories, Wenger stated:

*Trajectories suggest not a path that can be foreseen or charted but a continuous motion – one that has a momentum of its own in addition to a field of influences. As trajectories, our identities incorporate the past and the future in the process of negotiating the present.*

(Wenger 1998, pp. 154-155)

It is argued further here that the implication of such a view is that one should think about identity as an ongoing process of identification, a process of interpreting (and reinterpreting) oneself as a certain kind of person in a given context (Gee 2001). The work of identity is viewed as always ongoing, something that we constantly renegotiate during the course of our lives (Wenger 1998). Wenger postulated that there are various types of trajectories which include:

- Peripheral trajectories: trajectories that do not lead to full participation within a community but become significant enough to contribute to one’s identity
- Inbound trajectories: where newcomers are joining a community with the prospect of becoming full-time participants in its practices, for example, participants in this study as they transition in the contexts of schools as beginning teachers
- Insider trajectories: where new experiences, events and interactions create occasions for recreating and/or reinterpreting one’s identity, for example, when beginning teachers assume a new responsibility in their school
• Boundary trajectories: where value is found in spanning boundaries. However, Wenger warned that sustaining an identity across boundaries is challenging.

• Outbound trajectories: where one leaves a community, for example, the university that has contributed to how one will deal with what comes next. In leaving the community, one begins to see the world and oneself in new ways. (Wenger 1998, pp. 154-155)

Wenger’s concepts of trajectories as used in relation to communities of practice and the field of influence of others are referenced in greater depth in subsequent chapters. They are implemented in this study as a method for analysing the narratives of participants’ identity construction as they transition into the role of teacher.

2.2.3 Identity as a multifaceted phenomenon

Gee (2001) and Beauchamp and Thomas (2009) argued that identity is multifaceted in that it changes over time and through the influences of a range of internal factors such as emotion (Zembylas 2003) and external factors on the individual, such as life experiences (Sachs 2005; Flores & Day 2006). Gee (2001) recognised identity as a kind of person within a particular context and identified four perspectives through which identity may be constructed. They are:

1. Nature – identity (developed from one’s natural state)
2. Institution – identity (derived from a position recognised by authority)
3. Discourse – identity (resulting from the dialogue of others about oneself)
4. Affinity – identity (determined by one’s practices in relation to external groups).

(Gee 2001)

Gee’s emphasis when examining identity was on the multifaceted aspect of identity as the four perspectives are not separate from each other but rather interrelate and connect in complex ways. Acknowledging the four perspectives, however, enables attention to be focused on each of the aspects that form and sustain identities. Based on Gee’s (2001) four perspectives, the professional identity of the beginning teachers in this study could be shaped by: their own beliefs and understandings (nature), the
school contexts in which they teach (institution), the dialogue of colleagues and students (discourse), and an affiliation with colleagues (affinity).

Similarities can be drawn from the discussion on identity formation presented in the preceding section of the review of the literature. Wenger (1998) defined identity formation as a dual process, involving both identification and negotiability within a community of practice. According to Wenger (1998, p. 197), negotiability allows us: *to make meanings applicable to new circumstances, to enlist the collaboration of others, and to make sense of events or assert our membership.* Both Wenger (1998) and Gee (2001) agreed on the multifaceted nature of identity in that it involves multiplicity and fluidity in and across contexts. Gee further argued:

*The kind of person one is recognised as being at any given time and place can change from moment to moment in the interaction, can change from context to context, and, of course, can be ambiguous or unstable.*

(Gee 2001, p. 99)

Wenger’s (1998) and Gee’s (2001) view that identity is multifaceted, in that it changes over time and through the influences of a range of internal and external factors, provides a significant framing component of this study in that it enables the researcher to investigate the ‘how’ of professional identity transition and transformation. What follows is an examination of the literature that has highlighted the role that language and thought, as articulated through stories or narratives, play in shaping identity.

### 2.2.4 Identity as narrative

The emphasis within a postmodernist view is on the role that narrative, language and thought play in our interactions and experiences with others. The narrative rendering of identity is reflected in the work of Connelly and Clandinin (1987, 1999), Clandinin (1992, 1993, 2007) and Clandinin and Connelly (1996, 1998, 2000) who suggested that our identities are the stories by which we live. Clandinin (2007) argued that the ontology of lived experience enables professional identity to be viewed as relational, temporal and continuous: ‘relational’ because professional identity can be shaped by the social and cultural constructs of others in specific contexts; ‘temporal’ in the
sense that narratives can capture perceptions of professional identity at a particular moment in time; and ‘continuous’ because professional identity changes in response to life and professional experiences.

Connelly and Clandinin (1987, 1999), Clandinin and Connelly (1996, 1998, 2000), Bullough (2005), Soreide (2006), Clandinin (2007) and Cohen (2008) argued from the field of identity and narrative inquiry that it is the interconnectedness and intersection of our experiences, place and knowledge that merge to become identities in the sense of our narratives or stories by which we live. Bullough argued further that:

*It is within intersection that personas (or situated identities) reveal themselves, are or are not reorganised by others, and are judged as fitting – contextually appropriate or inappropriate to the rules, duties and meanings of an established storyline.*

(Bullough 2005, p. 240)

Stories told are spoken to specific persons, to an audience, and as the audience changes so too do the stories. Soreide (2006, p. 527) termed such stories as ontological narratives, narratives about the nature of existence, and suggested that these are the stories:

*We tell in an effort to make sense of how we experience ourselves and how we would like to be understood in order to bring structure to our lives in particular contexts.*

Holland et al. (1998, p. 3, cited in Sloan 2006, p. 125) argued further that: *people tell others who they are, but even more importantly, they tell themselves and then try to act as though they are who they say they are.*

However, Zembylas (2003) argued that the analytical focus of such a view is based on the discourse of the experience rather than the experience itself. Thus, by exploring the language that one uses to share one’s beliefs, experiences and opinions, aspects of one’s identity become apparent. It can be argued further that the shaping of
identity is also mediated through the telling of the story and to the feedback that one receives in relating the story. When stories are written, as is the case for the study that formed part of this thesis, the narrative is frozen and becomes a thing, a statement captured in a specific moment of time (Bullough 2005, p. 241). The narratives of participants in this study reflect beginnings, possibly developing middles but not endings of who they will become as Design and Technology teachers.

While the concept of identity is defined in various ways in the general literature, it is also used in different ways when exploring teacher professional identity. What follows is a review of the literature which investigates professional identity in the context of teaching and, more specifically, the nature of identity formation for beginning teachers.

2.3 Teacher professional identity and identity formation

Sachs (2001, 2005) argued that teacher professional identity stands at the core of the teaching profession by providing a framework for teachers to construct their own ideas of how to be, how to act and how to understand their work and their place in society. When defining professional identity, Sachs (2001, p. 153) argued that teacher professional identity is a set of attributes that are imposed upon the teaching profession by either outsiders or members of the teaching fraternity itself. Sachs (2001, p. 153) further stated that professional identity is: a concept of synthesis, integration and action. Thus, the concept of professional identity in this study is seen to be mediated through beginning teachers’ own experiences from past and current contexts, and their own beliefs and values about what it means to be a teacher. This concept is further integrated with the perception of the type of teacher to which they aspire to be. Nias (1989) and Knowles (1992) argued that it is these aspects which strongly determine the way in which beginning teachers’ teach and the way in which they continue to develop as teachers.

Beijaard, Meijer and Verloop (2004) and Beauchamp and Thomas, (2009) highlighted the diversity of ways in which to define professional identity with references being made to images of self in the role of teacher, and more specifically as a resource that people use to explain, justify and make sense of themselves in
relation to others (Beauchamp & Thomas 2009, p. 175). Lasky provided a succinct definition of teacher professional identity when stating: “it is how teachers define themselves to themselves and to others” (Lasky 2005, p. 900).

In becoming a teacher, beginning teachers must decide how they want to be viewed by others and how they want to view themselves. This entails adapting personal understandings and ideals to the contextual expectations of schools and education generally. As a consequence, beginning teachers need to develop a sense of professional identity that enables them to incorporate their personal subjectivities into the professional and cultural expectations of what it means to be a teacher (Alsup 2006, p. 27). Thus, developing a professional identity involves finding a balance or coherence between aspects of personal and professional identity. Failure to find this coherence may result in tension in that what is found relevant to the profession may be in conflict with the personal desires of (beginning) teachers and what they experience as good (Beijaard et al. 2004, p. 109). The formation of professional identity and the link to tensions for beginning teachers are examined in greater detail in section 2.3.3.

Beijaard et al. (2004) identified four essential features of teacher professional identity. The four features are that it:

- is a constantly evolving phenomenon
- involves both a person and a context
- comprises the notion of agency
- is multifaceted.

What follows in the review of the literature draws on each of the four identified essential features of professional identity identified by Beijaard et al. (2004) to examine the links to self and context for teachers generally and more specifically for beginning teachers of Design and Technology education.
2.3.1 Teacher professional identity as an evolving phenomenon

As a result of the evolving nature of teacher professional identity, Sachs (2001, 2005), Thomas and Beauchamp (2007, 2011) and Beauchamp and Thomas (2009) cautioned that understanding teachers’ professional identity and the issues related to it can be difficult and complex. Sachs (2005, p. 15) argued further that: “[t]eacher identity is not something that is fixed; rather it is negotiated through experience and the sense that is made from that experience”. For instance, when pre-service teachers commence their teacher education programs, aspects of their identities may be challenged or confirmed, often resulting in adjustment. Similarly, once pre-service teachers commence teaching, this shift will continue as they progress throughout their careers (Beijaard, Meijer & Verloop 2004; Alsup 2006; Thomas & Beauchamp 2007, 2011; Beauchamp & Thomas 2009).

Kelchtermans (1993), Mayer (1999) and Flores and Day (2006) argued that professional identity is based on the beliefs and perceptions one has about teaching and being a teacher; that is, it is the knowledge one has of self as teacher (Kelchtermans 1993, p. 447). This argument is advanced further to suggest that knowledge of self as a professional is continually reconstructed over time and through experiences in a range of contexts (Sachs 2005; Flores & Day 2006). Coldron and Smith (1999) supported this view when in their account of how teachers acquire their professional identities they apologetically used the singular term professional identity although they do not interpret that identity is fixed or unitary (Coldron & Smith 1999, p. 712). They argued that, from the beginning and during their careers, teachers are engaged in creating themselves as teachers. Being a teacher, they argued is a matter of being seen as a teacher by himself or herself and by others; it is a matter of acquiring and then redefining an identity that is socially legitimated (Coldron & Smith 1999, p. 712). Thomas and Beauchamp (2011, p. 762) argued further that a current difficulty confronting beginning teachers is coming to an understanding of the range and entirety of professional identity as it applies in today’s society. They argued that changes on a global scale in terms of expectations of public education require both beginning and in-service teachers to anticipate and adopt new roles in an attempt to keep up with constant diversification in society,
development of knowledge and increases to access to knowledge (Thomas & Beauchamp 2011, p. 762).

Such views regard professional identity formation as an ongoing process which is dynamic in nature. For beginning teachers, the development of a professional identity appears to be a central element in the transition from pre-service teacher to beginning teacher (Beauchamp & Thomas 2006, Thomas & Beauchamp 2011; Flores & Day 2006). Flores and Day (2006, p. 220) argued further that this development has been defined as: \[a\]n ongoing and dynamic process which entails the making sense and (re)interpretation of one’s own values and experiences that may be influenced by personal, social and cognitive factors. The literature has suggested that developing a strong sense of professional identity as a beginning teacher may be crucial to well-being and ultimately to long-term survival as a teacher.

In O’Connor and Scanlon’s (2005) research on what it means to be a teacher and, more specifically, on how teachers come to terms with the public demands of the teaching role, it became evident that both interaction with others and the role of thought (self-reflection) played a significant determining role in not only how one understood one’s self but, more importantly, how one dealt with the complexities that teachers faced. Over the last 20 years, the notion of reflectivity has become incorporated into many pre-service and in-service teachers’ views of what it means to be a professional (Furlong & Maynard 1995). The capacity to think about and reflect on experiences and to make considered judgments enables teachers to modify their professional practice and develop their professional knowledge and identity. Johnson, Down, Le Cornu, Peters, Sullivan, Pearce and Hunter (2012, p. 82) argued further that [t]eachers who engage in self-reflection seek to understand themselves, their students and their schools within the wider context of social, cultural, economic and political influences in society. Johnson et al. (2012) posited that the ability to reflect enables beginning teachers to challenge and develop their beliefs, assumptions, values and practices and to negotiate the contradictions and tensions associated with beginning to teach.

As beginning teachers engage in the process of creating their teacher professional identities, Vonk (1993) argued that they develop a sustainable identity. This is an identity that is adopted by beginning teachers in order to deal with the complexities
inherent in assuming the roles and responsibilities of the first year of teaching. However, Vonk (1993) viewed this as a transitionary stage in professional identity creation, a part of the beginning teachers’ survival kit as they strive for personal and professional acceptance from students, teaching colleagues and school leadership. Vonk (1993) identified two distinct phases in beginning teachers’ professional development: the threshold and the growing into the profession. The threshold phase encompasses the initial period of transition when beginning teachers are confronted with the full responsibilities of teaching. The growing into the profession phase is characterised by an acceptance by colleagues and students. This phase also sees beginning teachers focus their attention on the improvement of their teaching skills and occurs generally in the second or third year of teaching.

Lacey (1977) also identified three phases in the process of becoming a teacher: the honeymoon, the crisis and the failure of, or getting by. In moving through these phases, Lacy argued that beginning teachers enter a period of discovery and rediscovery of themselves as they cope with the responsibilities of their new role.

The research of Furlong and Maynard (1995), Berliner (2001), Feiman-Nemser (2001) and Fetherston (2006) into the stages of teacher development also suggested that beginning teachers transition through a series of stages. These stages are often depicted as a series of linear, successive developmental career stages shaped initially by idealism, survival and discovery. Fieman-Nemser (2001) and Fetherston (2006) argued that during the early stages of transition, familiarising one’s self to the responsibilities of teaching in a specific context is of paramount importance in developing a sense of self as teacher. During this time, beginning teachers are expected to: assume the level of responsibilities of their more experienced colleagues; become familiar with administrative processes; establish professional relationships with staff and students; and understand the complexity of the site in which they have commenced teaching.

However, Berliner’s (2001) research identified that the issues facing teachers in the early stages of beginning to teach are not necessarily related to deficiencies in pre-service teacher education programs or in the capability of beginning teachers themselves but are inherent in the professional experience of all beginners. As a
consequence, Berliner (2001) argued that by reviewing the conditions under which beginning teachers commence teaching, many of the issues could be addressed and improved.

One emerging issue that appears to significantly impact on the ability of beginning teachers to develop a sense of professional identity is that of tenure of employment. Research into the relationship between tenure of employment and the capacity to develop professionally has been limited in the past. Pietsch and Williamson (2010) identified that the context for employment for beginning teachers in Australia has changed markedly over the last 20 years with many graduating students now making the transition into teaching in an uncertain employment context. The result as argued by Pietsch and Williamson (2010, p. 333) is that: [t]he opportunity to develop an understanding of the profession, of themselves as teachers and of the means to professional competence, is constrained for many by fragmented initial employment experiences.

Pietsch and Williamson’s (2010) research identified that the tenure of employment into which beginning teachers commenced their profession had a significant effect on their ability to not only develop their professional knowledge but on their continuing commitment to the profession; and on their self-confidence and self-image as teachers. More specifically, Pietsch and Williamson’s (2010) research identified the significance of the relationship between the development of teachers’ professional competency and the continuity of access to collegial professional communities. The research further suggested that the stages in the development of expertise for teachers in fragmented situations, that is, short-term contracts or temporary relief teaching (TRT) were considerably extended when compared to those employed in permanent positions. There appears to be no research that has specifically investigated the relationship between tenure of employment and the development of professional knowledge of beginning Design and Technology teachers. This research aims to contribute to this gap in knowledge.

A growing body of research (Tickle 2000; Flores 2001) has highlighted not only the uniqueness and complexity of the early stages of transition but has also concluded that the way in which early-career teachers are supported or mentored through these
early stages has long-term implications for identity formation, continued professional growth and, ultimately, retention in the teaching profession. The findings of Tickle (2000) and Flores (2001) and other related research associated with supporting beginning teachers is examined further in the following section.

2.3.2 The role of mentoring in shaping beginning teachers’ professional identity

The theory behind mentoring and induction programs is that teaching is complex and that some aspects of teaching can only be acquired in the context of a school (Feiman-Nemser 2001). As a consequence, existing research has concluded that schools have an obligation to provide a supportive environment through which beginning teachers can further develop their professional knowledge and an understanding of their role as a teacher (see e.g. Ballantyne, Hansford & Packer 1995; Tickle 2000; Flores 2001; Carter & Francis 2010; Ingersoll & Strong 2011; MacGregor 2012).

Carter and Francis (2010, p. 250) described mentoring as a process that: *mitigates teacher isolation, promotes the concept of an educative workplace and that leads to the creation or understanding of consensual norms in schools or faculty*. More specifically, research has found that mentoring is used to address issues of teacher survival, skill development and, ultimately, retention in the profession. In Australia, 25–40% of beginning teachers resign in their first 3–5 years of teaching (Berliner 2001; Ewing & Smith 2003) These figures are drawn from beginning teachers who have secured permanent employment. A lack of adequate support from school administrators and colleagues has been identified as a significant contributing factor in beginning teachers’ decisions to leave the profession (Ingersoll & Strong 2011).

Harrison, Dymoke and Pell (2006) and Carter and Francis (2010) have argued strongly that those who undertake the role of mentor have the potential to play a significant role in assisting beginning teachers in not only developing their professional knowledge but also their professional identity. As argued by Tickle (2000), mentoring of beginning teachers can provide opportunities for self-reflection through which knowledge and understanding are informed. As a result, beginning
teachers are able to continually shape who they become, that is, their professional identity.

However, defining the role of the mentor is complex and definitions are diverse. For example, Clutterbuck (1992, p. 71) stated that: *a mentor is a more experienced individual, willing to share his/her knowledge with someone else less experienced in a relationship of mutual trust.* Clutterbuck’s definition placed the emphasis on the notion of coaching, or the passing on of knowledge, to facilitate the development of specific skills or capabilities. In the context of beginning Design and Technology teachers, a simplistic analogy could reflect a model of master and apprentice with the master demonstrating technical skills. However, the literature clearly identified that the role of the mentor is both multidimensional and complex.

According to Harrison, Dymoke and Pell (2006), the spectrum of skills and attributes required of a mentor could include the following:

- guiding/leading/advising/supporting
- coaching/educating/enabling
- organising/managing
- counselling/interpersonal skills.

The research also argued that more studies are required to understand the ways in which mentors construct their roles. What the research has clearly argued is that the success of the mentoring process is reliant on the relationship that develops between the mentor/s and the beginning teacher. Evidence has suggested that the success of the process can be deemed to be hit-and-miss and, as a result, McNally (1994) has posited that less emphasis should be placed on the notion of assigning one mentor to a beginning teacher. Instead, the provision of professional environments in which mentoring relationships can develop with a number of teachers should occur.

The concept of significant others making a positive contribution to the transition of beginning teachers into schools was further explored in the research of Carter and Francis (2010). As part of their research into mentoring and workplace learning, data
from six case study schools were collected throughout a one-year period. Beginning teachers (mentees) and mentors in these sites were asked to reflect on the mentoring process throughout this time. Four of the case study schools included mentoring as a key practice in their support of beginning teachers. These sites regarded mentoring as being separate to the school’s line management structure. However, the study found that being in a leadership role (e.g. Principal, Assistant Principal, Head of Faculty) did not preclude one from the role of mentor and, in fact, a number of the beginning teachers identified members of the leadership team as part of their mentoring team. The study revealed that the most effective mentoring processes emerged from a positive organisational climate in schools, that is, when the school had an established whole school ethos of supporting beginning teachers (Carter & Francis 2010).

Carter and Francis suggested that mentoring can engage both the mentor and the mentee/s in a: dynamic, interactive learning process (Carter & Francis 2010, p. 251). However, the literature has also warned that there is the possibility that a poorly organised mentoring process or the acquisition of a mentor who is not an appropriate role model can constrain the learning of beginning teachers (Ballantyne et al. 1995). More specifically in the field of Design and Technology education, mentors may find themselves limited in their knowledge of changing technologies such as advanced manufacturing or in contemporary constructivist approaches to learning. The consequence, according to Ballantyne et al. (1995), is that the mentor becomes antagonistic towards the beginning teacher and, in so doing, the status quo of the school context is maintained. They argued further that:

_The danger exists that mentors contribute to the professional socialisation of beginning teachers into the use of traditional techniques, rather than assisting the carry-over of progressive techniques into the classroom._

(Ballantyne et al. 1995, p. 302)

The aim of mentoring and induction programs should be to provide a supportive and encouraging environment where beginning teachers can learn their craft, survive and succeed (Ingersoll & Strong 2011). The result, according to Ingersoll and Strong (2011), would be that beginning teachers’ performance and retention would be improved.
What follows is an examination of the influence that school contexts can play in shaping professional identity.

2.3.3 Teacher professional identity – The person and the context

McLaughlin drew attention to the notion of school as:

> A workplace community is to be viewed not only as a physical setting and formal organisation but as a social and psychological setting in which beginning teachers construct a sense of practice, of professional efficacy and professional community.

(McLaughlin 1993, p. 99)

According to McLaughlin, viewing the school context with this lens facilitates an understanding of the ways in which values, beliefs, prejudices and behaviour are played out and serve to shape the identity of those within the context. Central to the formation of teacher professional identity is the notion of self within the school context. MacLure (1993), cited in Coldron and Smith (1999), contended that:

> Identity should not be seen as a stable entity – something that people have – but as something people use, to justify, explain and make sense of themselves in relation to other people, and to the contexts in which they operate.

(MacLure 1993, p. 312)

Schools are socially produced and culturally constructed contexts (Sloan 2006). As such, they can be viewed as places that provide specific histories, experiences and knowledge that can shape the stories that tell others who we are. As beginning teachers transition into their teaching role, the community of practice (Wenger 1998) widens and opportunities could arise for affirmation, challenge and possibly tension.

In their more recent study, Pillen, Biejaard and den Brok (2012) have continued to suggest that the process of becoming a teacher is complex: *influenced by many occurrences, practices and people* (Pillen et al. 2012, p. 2). Pillen et al. further suggested further that: *[m]any of the influences in this process may be experienced as conflicting and, at least to some extent, cause or lead to professional identity*
tensions. In their research into the possible tensions in beginning teachers’ professional identity development, Pillen et al. identified 13 tensions. These were:

1. Feeling like a student versus being expected to act like an adult teacher.
2. Wanting to care for students versus being expected to be tough.
3. Feeling incompetent in terms of knowledge versus being expected to be an expert.
4. Experiencing a discrepancy between one’s own, usually implicit, lay theories and theories that are relevant to the teaching profession.
5. Experiencing conflicts between one’s own and others’ orientations regarding learning to teach.
6. Being exposed to contradictory institutional attitudes.
7. Wanting to invest time in practising teaching versus feeling pressured to invest time in other tasks that are part of the teaching profession.
8. Wanting to respect students’ integrity versus feeling the need to work against this integrity.
9. Experiencing conflicting loyalties towards students and colleagues.
10. Wanting to treat students as persons as a whole versus feeling the need to treat them as learners (or vice versa).
11. Experiencing difficulties in maintaining emotional distance.
12. Experiencing difficulties regarding approaches to teaching.
13. Misconceived career perspectives about the teaching profession.

(Pillen et al. 2012, p. 5)

The tensions identified by Pillen et al. (2012) are drawn upon in Chapter 6 of this thesis to provide a comparative framework for the findings and analysis. The possibility of challenge and tension was also identified by Bullough who argued:

*The subject positions that we (in-service teachers) occupy and play out define for our colleagues, particularly our younger colleagues, models of professional being and provide conditions of membership. If they are to join with us, beginners must find acceptable and recognise subject positions which may require that they conceal conflicting aspirations.*

(Bullough 2005, p. 239)
Bullough (2005) argued further that the subject positions or situational identities that are the identities that teachers demonstrate often appear natural. However, Bullough warned that they are not and that they are shaped over time through history, routines and the expectations of others. Coldron and Smith (1999, p. 713) identified much of this history, experience and knowledge as traditions that: *inform the action of individuals by making available patterned sets of meanings, oppositions and possibilities*. As a result, beginning teachers are exposed, within an educational context, to a range of professional characteristics or dispositions that can be adopted by the individual. Coldron and Smith (1999) further argued that the construction of teacher professional identity involves making choices in regards to these traditions, characteristics and dispositions and, in so doing, one professionally locates oneself whilst informing others of one’s identity. The beginning teacher, for example, may seek to not oppose the history, nor question the experience or knowledge of the context, instead choosing to identify with existing traditions.

Coldron and Smith argued that tradition has within it *tensions and debates which are growing points* (Coldron & Smith 1999, p. 714). It was argued here that tradition can constrain but, at the same time, can provide opportunity for beginning teachers to initiate creative action and change. This is particularly the case in Design and Technology education where the dynamic nature of the subject facilitates the development and implementation of evolving curriculum knowledge and pedagogical approaches.

Clearly, identity is not viewed here as a fixed product of the individual, instead it can be viewed as being a *socialised and socialising process in which identities can be accepted as well as re-shaped* (Furlong 2013, p. 68). Wenger (1998, p. 146) argued that: *we cannot become humans by ourselves* and described identity formation as a dual process, involving both identification and negotiability within a community of practice.

It is through identification that beginning teachers are able to create connections with colleagues in schools through which they become identified with and identified as being someone who is accepted within the school community. Wenger (1998) linked identification to three modes of belonging, namely, engagement, imagination and
alignment. Engagement involves beginning teachers investing themselves in what they do and in their relationships with colleagues and students. Imagination enables beginning teachers to locate themselves in the world of teaching. Alignment connects beginning teachers through similarities in practice thus enabling the identity of the larger group to become part of the beginning teacher’s identity.

As a consequence, an identity, according to Wenger, is: *a layering of events of participation and reification by which our experiences and its social interpretation inform each other* (Wenger 1998, p. 151). A similar meaning was argued by Sloan (2006) who postulated that the specificity of schools as places or contexts of identity construction enable those who teach in them to develop a situated identity. Connelly and Clandinin (1999) used the term collective identity in arguing that the commonalities in the stories one tells about identity become a core identity that frames who one is within a specific context. For example, when applied traditionally and generically to South Australian secondary school Design and Technology educators, the situated or collective identity would include male, middle-aged, white and Australian. Observation has suggested that these educators would be seen as being ‘good at making artefacts with their hands’ and adept at engaging students (particularly boys) who are disinclined towards learning in other areas of the curriculum. One could argue that this is a collective identity for Design and Technology teachers that has remained unchallenged and unchanged for half a century. However, it is an identity that, in the past, has provided Design and Technology educators with a sense of belonging, a sense of personal and professional location (Weeks 1990).

Staples (2003) argued that many constructions of situated or collective identity in Design and Technology education focus explicitly on the teachers’ functional roles, that is, the transmission of specific subject know-how (Staples 2003, p. 300). This is particularly evident in the field of Design and Technology education where many teachers directly associate their professional identity with the curriculum which they deliver (Staples 2003).

In more recent times, political, social and educational change has caused this collective identity to be challenged and, for many teachers, it is a time of uncertainty
as they question and search for professional identification (Williams 2002, 2006; Seemann & Fee 2003; Webberly 2003). The nature and impact of political, social and educational change on the development of professional identity for beginning Design and Technology teachers is a major issue and for this reason it is addressed in more depth later in the literature review.

In contrast, Mayer argued for a focus on professional identity as distinct from that of a teacher’s functional role:

A teaching role encapsulates the things that a teacher does in performing the functions required of him/her as a teacher, whereas a teaching identity is a more personal thing and indicates how one identifies with being a teacher and how one feels as a teacher.

(Mayer 1999, p. 6-7)

Coldron and Smith argued further that every aspect of teachers’ work has a personal dimension, imbued with feelings and understandings that create patterns of personal meaning (Coldron & Smith 1999, p. 719) to enable one to find their voice and create their own sense of professional identity. It is this personal dimension that enables teachers to critically reflect and ask, “Who am I in this situation?” rather than “What do I know in this situation?” (Connelly & Clandinin 1999, p. 719).

This was more poignantly argued by Patterson (1991, p. 16) who stated that: those of us who are teachers cannot stand before a class without standing for something ... teaching is a testimony Thus, questions of identity, both personal and professional, are of profound importance for the individual teacher and for teachers as a collective. One issue that shapes both the personal and professional dimension of identity is the notion of agency and the relationship between cultural socialisation and the ability to self-author. This relationship is examined in the following section of the literature review.
2.3.4 Teacher professional identity – The notion of agency and the ability to self-author

O’Connor and Scanlon (2005) argued that beginning teachers must have the opportunity to integrate their own identity into their teaching role as it is this combination that brings individuality and uniqueness to one’s teaching. The view that beginning teachers have the capacity to exercise independence in shaping and maintaining their sense of self-identity, even when confronted by constant social suggestion, has been highlighted in the study by Johnson, Down, Le Cornu, Peters, Sullivan, Pearce and Hunter (2012). These views are representative of an interpretive tradition (Goodman 1988) which is founded on a belief that socialisation is individually mediated.

This means that beginning teachers also need to reconcile what their understanding is of what it means to be a teacher regardless of the expectations of others, the students they teach, their colleagues and the wider school community. This may mean building bridges between differing discourses, expectations and assumptions (Alsup 2006). When building these bridges, beginning teachers need to shape a professional identity with which they are at ease, one that enables them to actively pursue the goals that they value (Day et al. 2006).

Similar meanings can be found in the term self-authoring (Sloan 2006; Soreide 2006), a term which is applied in this study to capture the ways in which beginning teachers position themselves and have a voice in relation to others and to the contexts in which they teach. According to Soreide, the relationship between socialisation and the ability to self-author:


[p]romotes the teacher as a flexible, lifelong learner, able to participate in ongoing change and who has a voice in determining how they are identified by others and how they identify themselves.

(Soreide 2006, p. 532)

Renzaglia, Hutchinson and Lee (1997) further argued that beginning teachers who have a personal, established core of beliefs and practices are more likely to experience not only satisfaction in their roles as teachers but to act as change agents
in their classrooms and schools. These beliefs, as argued by Renzaglia et al., serve as filters for the new information and experiences that confront beginning teachers.

In an extensive study of the resilience of 60 beginning teachers in Australian schools, Johnson et al. found that:

Those (beginning) teachers who are socially and emotionally responsive in their professional relationships, and who have a personal commitment to the broader moral and ethical dimensions of teaching are more likely to succeed in shaping a satisfying professional identity that takes account of the person within.

(Johnson et. al. 2012, p. 77)

That is, beginning teachers who have a voice in shaping who they become based on their personal and professional beliefs are more likely to not only remain in the profession but to be able to bring about change.

However, a more pessimistic perspective on beginning teachers’ ability to bring their beliefs to a conscious level and to self-author has been espoused by others. Pugach (1992, p. 142), for instance, contended that the beginning teacher: [i]s acted upon by the powerful pervasive school culture such that individual teaching philosophies and beliefs are subsumed into the existing school culture. Lasley (1980), cited in Stuart and Thurlow (2000, p. 119) also argued that if beginning teachers: [d]o not bring their beliefs to a conscious level and articulate and examine them, they will perpetuate current practices and the status quo will be maintained.

Such views reflect a functionalist tradition (Stuart & Thurlow 2000). Proponents of this view have suggested that, as a result of beginning teachers’ lack of confidence and vulnerability, they are generally socialised into the status quo. These authors argued further that beginning teachers are unable to become change agents as this is an unattainable role and that socialisation is a process that serves to sustain conservative educational practice. In this instance, the ability for beginning teachers to self-author is limited or non-existent.
Bullough (2005) also argued that beginning teachers’ professional identities are heavily mediated by the specific cultural and institutional contexts of schools. Bullough argued further that schools prefer and encourage particular types of professional identities and, in so doing, can constrain and enable some aspects of identity formation. For beginning teachers, managing the interplay between socialisation and the ability to self-author can lead to conflict or losing a sense of the personal self. The consequence of unresolved management can lead to negative consequences including leaving the teaching profession (Bullough 2005).

Questions that have arisen from the literature in regards to the ability of beginning teachers to self-author are: “will beginning Design and Technology teachers’ beliefs and views be strengthened as they interact with others?” or “will the beginning teachers face conflict and assume the beliefs of the dominant school culture?” Furthermore, this study asks: “will beginning teachers be able to self-author, thus enabling them to be the teacher that they want to be?” Limited evidence in the research literature into this aspect of professional identity therefore invites a study which focuses on the relationship between beliefs, socialisation and the ability of beginning Design and Technology teachers to self-author.

The following section of the review investigates more specifically the research that has explored the influences which are part of the ongoing process of professional identity formation and transformation for beginning teachers.

2.4 Influences that shape beginning teachers’ perceptions of professional identity

As highlighted in section 2.3, the perceptions of professional identity that beginning teachers hold have been shaped by a range of social, political and educational constructs and reflect influences of the past, the present and, perhaps, a vision for the future (Flores & Day 2006). From the findings of their two-year, longitudinal study of 14 middle-school beginning teachers, Flores and Day (2006) have argued that there are three key mediating influences on the formation of professional identity of beginning teachers. These influences are:
1. Pre-teacher identity – shaped through schooling experiences
2. Past influences – personal and professional histories and teacher education programs
3. Contexts of teaching – school cultures including school leadership.

Flores and Day’s (2006) study revealed how these key influences shape and reshape the professional identity of beginning teachers over time and how the interplay between these influences affects teaching practices. As a result of the study, Flores and Day (2006) argued that personal and professional histories, teacher education programs, school culture and leadership emerge as stronger influences in determining the kind of teacher that one becomes than had been previously acknowledged in the literature.

For this reason, the four identified influences of personal and professional histories; university teacher education programs; professional knowledge; and school contexts are explored further in the subsequent sections of the review both generally and specifically in the context of beginning Design and Technology teachers. The following section commences with an examination of the role that personal and professional histories play in informing professional identity.

2.4.1 Personal and professional histories

Life history research (Louden 1991; Goodson 1992; Furlong 2013) has revealed that biography affects the practice and professional identity of teachers. Lortie (1975), Britzman (1991, 1999, 2003), Knowles (1992), Smith (2003), Flores and Day (2006) and Groundwater-Smith, Mitchell and Mockler (2007) argued that when pre-service teachers commence their university study, they bring with them varied beliefs about who they believe they will become as teachers. Flores and Day’s (2006) longitudinal study of 14 middle-school beginning teachers highlighted the fact that the development of teacher professional identity commences long before a teacher starts teaching and before the commencement of study in teacher education programs. The fact that everyone has had an educational experience makes teaching one of the most familiar professions. As a result, it is taken for granted that we all know what a teacher is and does (Britzman 1999). Britzman (1999, p. 313) argued further that:
schooling fashions the meanings, realities, and expectations of students; thus, those learning to teach draw from their subjective experiences constructed from actually being there.

That is, pre-service teachers commence teacher education programs with a preconceived image of what it means to be a teacher. Cohen-Scali (2003) argued further that by the time pre-service teachers commence their study, many have developed a cognitive map of what they think it means to be a teacher. That is, they have already developed established beliefs and knowledge related to teaching and being a teacher. Similar meaning can be found in the term *lay theories* used by Furlong (2013, p. 70) to describe the attitudes, beliefs and values, shaped by previous experiences, that beginning teachers bring to teaching.

The research has further suggested that historical and biographical narratives continue to influence pre-service teachers as they make the transition into teaching (Keltchermans 1993; Coldron & Smith 1999; Furlong 2013). This view was supported by Hargreaves and Fullan who concluded that:

*Teachers teach in the way that they do not just because of the skills they have or have not learned. The ways they teach are also grounded in their backgrounds, their biographies, their hopes and dreams, opportunities and aspirations for the future.*

(Hargreaves & Fullan 1992, p. 4)

Anecdotal evidence suggests that it is these narratives and the beliefs that initially underpin and dramatically shape the professional identity that Design and Technology pre-service teachers assume as they commence their pre-service study. For this reason, a brief overview is provided of the research concerned specifically with beginning Design and Technology pre-service teachers’ perceptions of their professional identity.

Annual surveys of first-year pre-service teachers in a Bachelor of Technology Education program at an interstate university have revealed that the majority believed they would be trained as Manual Arts teachers and not Design and Technology
teachers (Chester 2003, cited in Smith 2003). That is, they believed that they would focus on the processes of construction, with minor or no consideration of social needs and implications of technology (Smith 2003, p. 17). One possibility for this finding could be that many pre-service teachers who commenced their study brought with them a strong memory of how they were taught (Groundwater-Smith et al. 2007). That is, they observed the practice of Manual Arts teachers who emphasised the process of construction rather than developing a holistic understanding of technology.

As stated previously, unlike other professions, people have a strong sense of what the role of a teacher entails through their own experiences as a student. Applebee (1989, p. 217) supported this idea and argued that: *when we start to teach something new, one of the most powerful influences on what we do is our memory of how we were taught.*

Many of the pre-service teachers who have commenced study in the Bachelor of Education, Design and Technology program at the university where the study that forms part of this thesis is located cite the influence of past teachers, often a Design and Technology teacher, as a reason for their decision to become a teacher in this field. When asked early in their study to provide an image of how they see themselves as a teacher, pre-service teachers often draw upon the professional characteristics of a past and well-liked teacher. In this instance, pre-service teachers have developed representations of teaching and the kind of teacher they would like to be through an apprenticeship of observation (Lortie 1975). Lortie (1975) postulated further that by the time a pre-service teacher commences their university study, they have spent approximately 13,000 hours observing teachers. As a result, pre-service teachers may enter teacher education programs with a belief that anyone can teach. Consequently, the first culture shock for many pre-service teachers is the realisation of how complex teaching really is (Britzman 1999).

Mayer (2006) also suggested that the narratives of professional identity that beginning pre-service teachers bring to their study are diverse, a result, in some instances, of the changing profile of those entering the field of education. A growing percentage of pre-service teachers who commence study are mature age or career switchers (Richardson & Watt 2006) and the memories they hold of teaching are from
some time ago. In Design and Technology education, there is a high percentage of mature age pre-service teachers, including career switchers, and these pre-service teachers draw on their life experiences (such as technical and trades’ backgrounds) to inform their professional identity (Bussey, Dormody & Van Leeuwen 2000, cited in Smith 2003). Smith’s (2003) research into the influences that shape practising Design and Technology teachers’ professional identity suggested that it is this mature age cohort who are more open to change and who see value in technology education.

While the research literature has identified that personal and professional histories can influence and shape the professional identity of pre-service and beginning teachers, evidence has also suggested that the culture of university programs and the courses within them can also contribute to the formation of professional identity (Williams 2006). It is university culture, including the culture of the undergraduate Design and Technology Education program in which participants from this study were enrolled, that will be reviewed in the following sections.

2.4.2 University culture – Teacher education programs

Teacher education programs provide the knowledge base from which pre-service teachers can build their understanding and identify what is relevant to teaching. Bullough and Gitlin (1995, 2001), Bullough (1997, 1999, 2005) and Beijaard et al. (2004) highlighted the importance of teacher education programs in recognising professional identity development as being a crucial aspect of the courses that are taught. Beijaard et al. (2004, p. 123) argued further that: it is the ongoing integration of what is individually and collectively seen as relevant to teaching that enables the professional identity formation process of pre-service teachers to be supported. However, recent studies (Sachs 2005; Lamote & Engels 2010) into the development of pre-service teachers’ professional identity, have suggested that teacher education programs need to provide greater opportunities through which pre-service teachers can continually redefine their professional identity.

Lamote and Engels (2010) argued further that this redefining process is a series of short-term evolutions that will continue not only during university study but throughout a teacher’s career. Lamote and Engels argued that the role of the
university teacher educator is to support the professional identity development of pre-service teachers in ways that correspond with contemporary views on learning and teaching. This sentiment is particularly relevant to the role of the Design and Technology teacher educator, as the evolving nature of the field necessitates a critique of and a possible challenge to the more traditionally held views regarding the Design and Technology teacher’s identity.

The work of Foucault (1990), examined in preceding sections of the review of previous research, drew attention to the socially constructed nature of identity. This view is most pertinent to the development of professional identity throughout teacher education programs, where pre-service teachers are introduced to and, at times, confronted with philosophies on teaching as well as engaging in professional experiences in a range of educational settings. Reynolds argued that school-based professional experiences provide the greatest opportunity to affirm and challenge pre-service teachers’ concepts of professional identity (Reynolds 1996, p. 71). During professional experience, pre-service teachers may be confronted with teaching dilemmas, conflicting expectations, feelings of inadequacy, and tensions between their expectations and what they can achieve (Volkmann & Anderson 1998). Throughout these experiences, pre-service teachers have to determine not only how and where they ‘fit’ at the time, but they also need to consider what kind of teacher they want to be in the future (Lamote & Engels 2010). Loughran stated further that:

*Students (pre-service teachers) sometimes do things they feel they have to do to fit in even if it is contrary to that which they would prefer to do and in doing so discover alternative identities and learn more about themselves*  
Loughran 2006, p. 116

Beauchamp and Thomas (2006) argued that making the connection between what is learned in teacher education programs and what happens in schools can better prepare beginning teachers for any disjunctures or tensions that they may confront not only throughout school-based professional experiences but also once they commence teaching. As a consequence, university teacher education programs should be viewed as a pivotal resource in constructing the individual’s self as an educator. While the research of Coldron and Smith (1999) and Lamote and Engels (2010) validated this
claim, there has been limited evidence that specifically relates to teacher education programs in Design and Technology education. This research addresses that gap. What follows is a specific exploration of the influences that have served to shape the university culture of Design and Technology teacher education programs within Australia and to a lesser extent internationally.

2.4.2.1 University culture – Design and Technology education programs

To develop an understanding of the field of Design and Technology education and, more specifically, to understand its dynamic nature, it is necessary to explore the historical development of its place in teacher education programs. Pre-1988, most secondary teachers in Australia, including Design and Technology teachers, were trained at Colleges of Advanced Education. After 1988, colleges amalgamated with or became new universities. The rationale for teacher education programs in Design and Technology to occur in university technological faculties (Industrial Design, Engineering, etc.) was based on an assumption that it would strengthen the content base of teacher education programs (Williams 2006). Williams, however, argued that this has succeeded to a very limited extent as a result of what he suggests as: reticence on the part of university faculties to assume responsibility for the content of technology teacher education (Williams 2006, p. 192).

Williams (1996) revealed that a 1996 survey of teacher education programs offered in Australian universities indicated that of 38 universities only nine offered undergraduate programs in Design and Technology. Reflecting a world-wide trend to erode undergraduate Design and Technology teacher education programs, recent statistics (DATTA 2009) revealed that in Australia only three universities continue to offer four-year undergraduate programs in Design and Technology education with the majority of universities offering double degrees or a Master of Teaching program. Much research (see e.g. Tuffnell 1997; Barlex 2011; Atkinson 2012) has been published which argues against these changes with the misalignment between the subject knowledge gained from the first degree and what is required to teach Design and Technology being cited as a major concern.
In an extensive study of the relationship between the time spent studying and the development of Design and Technology pedagogical content knowledge (PCK) in England and Wales, Atkinson (2009, 2011, 2012) revealed a clear correlation between the two. More specifically, Atkinson’s research indicated that an increase in the length of time spent studying at university facilitated the development of positive attitudes and beliefs about teaching Design and Technology in ways that valued innovation and creativity and embraced design as a core methodology. That is, when pre-service students had the opportunity to complete a university-based undergraduate program in Design and Technology, they developed the conceptual tools and the procedural and physical skills required to teach successfully in ways that reflected an holistic, design-based pedagogy.

Gibson and Barlow (2000) argued that the major reason for the erosion of four-year undergraduate degrees is largely based on financial restructuring within universities. The authors claimed that university administrators do not favour technology education programs as these programs are seen as suffering from low intakes, low tertiary entry scores and high costs, and are less likely to attract full fee paying students from overseas.

Similarities can be drawn in many Australian school settings where the academic identity of Design and Technology continues to influence its delivery and perceived educative value. Design and Technology education is viewed in some schools as an expensive area to finance and school managers and administrators do not always favour providing funding to upgrade facilities, purchase resources or employ tenured staff. School student numbers in some schools are low and, at times, students in Design and Technology education are viewed as being less academic. This ultimately creates problems and tensions for how the field is perceived and valued by both those who not only work in schools but in the wider community. The tension thus created for both beginning and in-service teachers is explored in greater depth in section 2.4.6.

The structure of the current Bachelor of Education, Design and Technology program, as outlined in Chapter 1, differs significantly from those offered in the past. In the past, the majority of courses were taught by Design and Technology staff in purpose-
built facilities. As a result, students studied predominantly in the same setting with a familiar cohort of staff and students for the majority of their studies. Programs were delivered through a model that was somewhat more insular than is currently the case. While the previous model had distinct advantages in developing subject-specific content knowledge that provided both breadth and depth, opportunities for broadening general educational knowledge and challenging the status quo of how Design and Technology could be taught appeared to be constrained.

Lamote and Engels (2010) argued that the role of the university is to support the professional identity development of pre-service teachers in a way that corresponds with contemporary views on learning and teaching. While the culture of the current Bachelor of Education, Design and Technology program places emphasis on developing the skills and knowledge associated with designing and producing artefacts using a wide range of resistant materials, it is a culture that encourages pre-service teachers to critique the use of, and consequence of technology, and to engage with associated issues, such as sustainability and preferred futures. The program also encourages pre-service teachers to: redefine the discourse of the past and to reflect upon and question their assumptions, beliefs and values about what it means to a teacher of Design and Technology. The nuance in the language and meaning between a teacher of Design and Technology and a Design and Technology teacher is clearly articulated throughout the program. The former emphasises the holistic nature of education and the need to understand one’s role of being a teacher generally before being shaped by the content of the subject specialisation.

While the term Design and Technology teacher is generally used to identify teachers in this field and within this study, participants in this study have been encouraged to identify themselves firstly as a teacher and, secondly as a teacher of a subject specialisation. In addition to supporting pre-service teachers in developing their knowledge, skills and a holistic understanding of the field, the program also encourages pre-service teachers to become change agents and advocates for Design and Technology education both during and upon graduating from the program.

While research (see e.g. Coldron & Smith 1999; Sfard & Prusak 2005; Williams 2006; Lamote & Engels 2010) has recognised the impact of teacher education
programs, university culture and, more specifically, the teaching staff of universities as being major influences that shape pre-service and beginning teachers’ professional identity formation, other studies, for example, Flores and Day (2006), have disputed this view. As a result of a study of beginning teachers in their first two years of teaching, Flores and Day (2006) have claimed that pre-service teacher education programs seemed to have a relatively weak impact upon the way in which new teachers approached teaching and viewed themselves as teachers.

The following section of the review examines current educational changes to the field of Design and Technology education that may serve to inform and shape beginning Design and Technology teachers’ professional identity.

2.4.3 Educational change in Design and Technology education

Historically, Design and Technology education in Australia situated itself in the field of boys’ craft, manual arts and, until recently, technical studies. Williams concluded that:

The genesis of technology education can be found in the institutions’ establishment in early colonial centres to combat child delinquency, petty crime and to provide a trained workforce to the trades and in housekeeping.

(Williams 2006, p. 183)

Internationally and nationally, Design and Technology education at a curriculum level has changed dramatically over the last 10–30 years, starting with a transition from vocational to general education and, more recently, a return to vocational education through a series of curriculum reforms. In Australia, these changes have largely been an attempt to align classroom pedagogical practices with contemporary developments in Design and Technology education in the UK and Europe.

The most influential of these changes within Australia was the introduction of a national curriculum in 1994 (Australian Education Council [AEC] 1994a, 1994b). Developed from a series of initiatives from the Australian Education Council (AEC), the nationally-agreed Statements and Profiles identified eight compulsory learning areas and, for the first time, Technology education was included. The Technology Statement and Profile (AEC 1994a) as a curriculum document encouraged teachers to
move away from a narrow instructional craft orientation to one which acknowledged the consequences of technology from a social perspective. The pedagogical shift was one that moved from a didactic to a constructivist approach to teaching and learning (Middleton 2006). Through the Technology Statement and Profile, students were encouraged to design, make and appraise not only their own work but that of professional designers and manufacturers in the wider community.

In 2001, the introduction of a new curriculum policy in South Australia, the South Australian Curriculum, Standards and Accountability (SACSA) framework (DETE 2001) built on the changes introduced through the National Statements and Profiles to herald a new stage in the development of the field. The introduction of SACSA lead to a paradigm change (Pavlova & Smith 2003), that is, a change in the discourse (Kamler & Thomson 2006) that defines and produces what teachers know and teach, as well as how the field of Design and Technology education is described.

In these curriculum documents, the learning area of Technology education was renamed Design and Technology education. The renaming from Technology education served to emphasise the explicit place that design should hold as a core methodology (MacGregor 2002). SACSA provided educators with both a framework for planning as well as opportunity to reshape teaching practice. The SACSA teaching framework emphasises that we live in an increasingly technological world and aims to give school students the opportunity to develop a holistic understanding of the social, environmental and economic implications of technology (MacGregor 2009). Hope (2004) defined ‘technology’ as the intentional use of made and found objects to answer the problems of human needs and wants. The SACSA framework for Design and Technology education embraces this sentiment as it enables school students to engage in the processes of designing sustainable and appropriate solutions to perceived needs or problems. More specifically, students are encouraged to be creative and innovative when problem solving.

There is no doubt that Design and Technology education continues to be valued by students. A recent submission to the Australian Curriculum, Assessment and Reporting Authority (ACARA 2012) by the Australian Youth Forum (2012) on the Technologies subject to be developed in the proposed national curriculum reported
that over 96% of the young people who participated in the consultation process indicated that Design and Technology was an important subject because it:

1. Prepared them for employment
2. Made their school learning experience more enjoyable, relevant and hands-on
3. Made learning complex subjects easier.

(Australian Youth Forum 2012 p. 9)

Curriculum development over the last 10 years has seen a move away from specific skilling or the transmission of subject specific know-how (Staples 2003, p. 300), known as manual arts or technical studies, to a more general education. A general education in Design and Technology currently adopts a holistic approach to teaching and learning and is characterised by the development of a core of capabilities and values that include higher-order thinking processes to create sustainable design-based solutions.

However, the observation of teaching practice in Queensland secondary schools has suggested the reality that the adoption of the curriculum introduced in 2001 has been gradual and uneven (Pavlova & Smith 2003). At best, it has been fragmented throughout individual educator’s teaching; at worst, it has been totally ignored. Pavlova and Smith (2003) argued that one of the many elements that have contributed to this poor adoption is resistance to change. When examining the link between professional knowledge, pedagogy and the professional identity of Design and Technology teachers, Staples argued that the identity we, as Design and Technology educators ascribe to ourselves can be directly related to the curriculum we deliver (Staples 2003, p. 300). If this is the case, then one could argue that adopting a new curriculum that fosters a holistic approach to teaching is unsettling for some teachers and that the safety in teaching a skills-based curriculum enables some teachers to remain in their comfort zone as they continue to teach areas with which they are familiar.

The reticence to embrace curriculum change is further amplified when one realises that professional profile data (Department of Education and Child Development [DECD] 2010) has revealed that the largest cohort of Design and Technology teachers (32.9%) in the state in which this study was undertaken were in the 50–59
year age group with 10.8% in the 60 and over group compared with only 16.7% who were in the 20–29 year age group. As a consequence, a high percentage of Design and Technology teachers may be looking towards retirement. As a consequence, the idea of adopting and implementing curriculum with a broader subject content knowledge focus and pedagogical approach may receive limited priority.

Barlow (2002, 2012) argued that beginning Design and Technology teachers are being confronted by a situation where they are generally required to possess a significantly different and more expansive knowledge base compared to that of their more experienced colleagues. The emergence of new technologies such as computer modelling, 3-D printers, rapid prototyping and laser cutters is encouraging creativity, design thinking and problem solving and represents an increasing knowledge base (Barlow 2012). The soon-to-be-trialed (2013) National Technologies curriculum will herald further changes as it encourages teachers to further expand their professional knowledge to enable students to understand and engage with a range of traditional, contemporary and emerging technologies.

Reynolds (1996), Coldron and Smith (1999) and Fetherson (2006) argued that beginning teachers can be confronted with in-service teachers who are not only reluctant to change but who are not always supportive of those who want to embrace new curriculum and new technologies to move forward. This reticence may present a tension for early-career Design and Technology teachers who, through their recent university study, have been encouraged to implement curriculum through a holistic, student-centred pedagogy. The lack of literature exploring this possible tension has therefore invited a study to investigate if early-career beginning teachers in the field of Design and Technology education are able to exercise personal control in their thinking and their actions during this time of educational change and as they make the transition into professional practice.

2.4.4 Professional knowledge
For the last two decades, there has been considerable research (Shulman 1986; Grossman, Wilson & Shulman 1989; McNamara 1991; Beijaard et al. 2000, 2004) into the forms of knowledge that teachers require to perform their role. This research
has included a limited number of studies on early-career Design and Technology teachers (Banks & Barlex 1999; Banks, Leach & Moon 1999; Banks, Barlex, Jarvinen, O’Sullivan, Owen-Jackson & Rutland 2004; Banks 2008).

When devising a framework to enable pre-service, beginning and in-service Design and Technology teachers to reflect on their professional knowledge, the Centre for Research and Development in Teacher Education (CReTE) at the Open University of London (see Banks & Barlex 1999, Banks, Leach & Moon 1999) drew on both curriculum theory (Shulman 1986) and cognitive theory (Gardner 1983, 1991). The conceptual teacher professional knowledge framework (see Figure 2.1) was originally developed to assist pre-service teachers to visually represent their understanding of professional knowledge and to assist them in considering aspects of their classroom practice.

The rationale in developing the model was the conclusion drawn from the research that establishing a shared agreement about teacher professional knowledge for Design and Technology could help pre-service and beginning teachers to reflect on their practice and facilitate informed discussion. For this reason, an adapted version of the framework was implemented in this study as a method for data collection and is discussed further in the context of this study in the following chapter.

In the framework for conceptualising teacher professional knowledge, Banks and Barlex (1999), Banks et al. (2004) and Banks (2008) suggested that in-service and beginning Design and Technology teachers require the following forms of knowledge:

- Subject content knowledge – working knowledge and understanding of specific aspects of Design and Technology, for example, control systems, textile technology, resistant materials, coupled with understanding and implementation of curriculum documents.

- Pedagogical knowledge – subject application, and knowing and understanding the ways in which students learn. The term pedagogical content knowledge (PCK) can also be applied to refer to the changes that a teacher must make to
their pedagogy to formulate subject matter so that it can be understood by students. PCK can also be subject-specific and is impacted upon by school subject knowledge and the constraints and opportunities it presents.

- School subject knowledge – recognising that school-based Design and Technology education is different to that practised in the world outside school, including aspects that may be specific to a site such as resource availability, expertise of existing staff or budget constraints.

Figure 2.1: The CReTE Framework of Teacher Professional Knowledge (see Banks & Barlex, 1999; Banks, Leach & Moon, 1999)

Beijaard et al. (2000) argued that there is a need to recognise that professional knowledge and the role of the beginning teacher cannot be reduced to technical or instrumental action. Similarly, Banks and Barlex (1999) and Banks (2008) argued that beginning Design and Technology teachers need to develop their own personal subject construct which they suggested is:

_A complex amalgam of past knowledge, experiences of learning, a personal view of what constitutes ‘good’ teaching and a belief in the purposes of the subject_

(Banks & Barlex 1999, p. 7)
Banks and Barlex’s view enabled the teachers’ role to move beyond that of transmitter of knowledge to one of facilitator of learning (Beijaard et al. 2000; Staples 2003). Staples identified the following characteristics of the Design and Technology teacher who adopt a transmissive teaching role:

- Sees self as a source of expertise
- Values the currency of their own technical skills
- Uses set projects as the prime vehicle for teaching and learning
- Personal expertise is narrow but in-depth

(Staples 2003, p. 303)

In contrast, Staples identified the characteristics and the role of the holistic teacher or facilitator of learning as one who:

- Sees self as a process guide
- Identifies broadly with design and technology education
- Is interested in contemporary issues of design and technology
- Values innovation and creativity
- Embraces change and anticipates a professional life of learning

(Staples 2003, p. 306)

Pedagogical practice in Design and Technology education has, in the past, centred specifically on what the teacher is teaching (Zuga & Bjorkquist 1989; Paechter & Head 1996) and not necessarily on questioning what, how or why the students are learning. That is, teachers have adopted a transmissive role displaying the characteristics as identified by Staples (2003) and as outlined above. Learning in Design and Technology education has traditionally been strongly focused on an established body of technical know-how or learning specific skills through doing (Williams 2006). The pedagogical approach was one of master and apprentice, where students would observe and step by step would replicate the processes demonstrated by the teacher. As Banks (2008, p. 29) stated: [i]n a school’s technology faculty, there is a collection of different pedagogic styles developed from several ancestors in manual training.
The consequence is that pre-service Design and Technology teachers will be confronted with different experiences and expectations of their teaching role once they commence teaching.

In their empirical study of gender, identity and status, Paechter and Head (1996) concurred with this view and argued that the deeply gendered historical legacies of a subject that was initially developed to prepare young boys to attain the physical skills necessary for employment continue to influence and shape Design and Technology today. More significant for this study, however, is that Paechter and Head’s (1996) research clearly linked the possession and demonstration of specific skills to the professional identity of the Design and Technology teacher. The research found that if specific skills could not be taught in particular ways, for example, through demonstration, Design and Technology teachers suffered a loss of identity.

In more recent times, the technological and pedagogical knowledge base of Design and Technology teachers has expanded and continues to expand dramatically both internationally and within Australia (Barlow 2002, 2012). As detailed in earlier sections of this literature review, curriculum development over the last 10 years has seen a move away from specific skilling or the transmission of subject specific know-how (Staples 2003, p. 300) known as manual arts or technical studies to a more general education.

If, as suggested by Beijaard et al. (2000), teachers derive their professional identity from both the subject matter they teach and their pedagogy, then recent changes to the curriculum could be unsettling for teachers of Design and Technology. The move away from a transmissive approach to one which sees the teacher adopt a facilitator role (Staples 2003) will require teachers to question and reshape their professional identity. This is a shift that may not come easily for some Design and Technology teachers. Paechter and Head (1996) argued that Design and Technology teachers are reluctant to teach aspects of the curriculum in which they do not feel personally proficient. While more recent Australian studies to support this claim are limited, studies from New Zealand (Mawson 2009; McGlashan & Wells 2011) have argued that Design and Technology educators face major challenges when they prepare to
meet the demands of revised curriculum, particularly when it involves changes to both subject content and teaching pedagogy.

Staples (2003), Banks et al. (2004) and Watson (2006) have examined the relationship between professional knowledge, including subject knowledge and pedagogical practice and the development of professional identity. The links they identified are complex and often historically located. The evidence has clearly argued that for in-service Design and Technology teachers the subject they teach, and the ways in which they teach, defines who they are. These observations give rise to the question: “with such traditionally grounded beliefs of what it means to be a Design and Technology teacher, how difficult will it be for beginning Design and Technology teachers to teach in different ways?”

2.4.5 Social and political influences on Design and Technology education

The subject content and pedagogical knowledge in Design and Technology education are currently being strongly influenced by economic and industrial agendas (Seemann 2003; Webberly 2003). These agendas view Design and Technology education as a means to address rapidly changing global and local economies (Webberly 2003, Grimmett 2008). ‘Learn to Earn’ has become the central topic of many current educational debates (Department of Education, Employment and Workplace Relations 2008). ‘Trade Training Centres’ in schools, ‘Vocational Education and Training’ and ‘Engineering Pathways’ have been developed to ensure that students leave school with the skills to earn.

This approach can be interpreted as a political call for a move away from general Design and Technology education for all students towards one of vocational education. This move, as argued by Williams, has the potential to:

Segregate the breadth of Design and Technology education to a focus on the subsets rather than the holism. This could lead to a dominance of these areas over the broader goals of Design and Technology education to produce technologically capable individuals.

(Williams 2002, p. 279)
It is a view that one could argue is a return to the teaching of Design and Technology based on a model from 20 years ago, that is, a return to a pedagogy of demonstration, and to a curriculum which is skills-based and competency-driven. The argument developed here is that such a view will not only strongly influence how a Design and Technology curriculum is shaped, interpreted and implemented but such changes could also impact on the shaping of the professional identity of beginning teachers.

2.4.6 Teaching contexts – School cultures and leadership

Connelly and Clandinin (1999) further described the influences that shape the process of becoming a teacher as part of a changing landscape. As pre-service teachers transition into the roles of a beginning teacher, the landscape changes dramatically. Aspects or features of the landscape that were once familiar, as argued by Connelly and Clandinin (1999), are either confirmed or challenged. As beginning teachers navigate the changing landscape from university to schools they cross both physical and conceptual borders (Connelly & Clandinin 1999, p. 112) and in so doing continually shape their professional identity.

Rust (1994), Reynolds (1996), Coldron and Smith (1999) and Fetherson (2006) argued further that when beginning teachers cross the physical and conceptual borders they need to become familiar with school cultures. These authors argued that it is the school culture that informs and determines to a large extent the stories of individual teachers, including the way they perceive their professional identity. Reynolds identified schools as workplace landscapes that are related to teachers’ identities by cultural scripts which prescribe what they think and do (Reynolds 1996, cited in Beijaard et al. 2000, p. 752). That is, Reynolds argued that the school environment itself, including school leadership, teachers, students and the wider school community is just as strong a determinant in shaping professional identity as the individual.

Research into school cultures has highlighted diversity in both structure and impact in terms of the influence they have on beginning teachers’ professional identity and development (Hargreaves 1994; Flores 2004; Beauchamp & Thomas 2009). Hargreaves’ (1994) research into school cultures identified four main categories.
These are:

- Individualism
- Balkanisation
- Contrived collegiality
- Collaboration

Hargreaves’ study found individualism to be a strong feature in many school contexts. Beginning teachers who find that they are isolated in a classroom with little support or feedback from colleagues would be identified by Hargreaves under the category of *constrained individualism*. That is, they work in isolation as a result of administrative constraints. *Balkanisation* occurs when teachers present strong alliances with a particular group. The alliance could be within a particular faculty. In Balkanised cultures, groups of teachers compete for status, resources and influence. *Contrived collegiality* is a category through which relationships are imposed. Hargreaves argued that relationships that form through this category are the least effective for professional development. The final category is *collaboration* in which the relationships formed are voluntary, evolutionary and development-orientated in nature. These relationships, according to Hargreaves, are the most effective in supporting professional growth and development.

A more recent examination of the literature (see e.g. Flores 2004) has revealed a growing emphasis on Hargreaves’ final category; that is, teacher collaboration as a key factor in supporting not only beginning teachers but all teachers in continued professional growth and development. Similarities can be drawn here with the role that mentoring plays in shaping beginning teachers’ professional identity, a theme explored earlier in this chapter.

The context in which beginning Design and Technology teachers locate themselves can be further complicated by a number of subject-specific issues including: the perceived status of the discipline in some schools; the skills-based and resource-reliant nature of the subject; and the need for teachers to demonstrate a clear understanding of occupational health, safety and welfare (OHSW) issues to ensure
personal and student safety. As a result, the school context often provides very clear expectations about who, what and how the Design and Technology teacher will teach and, in so doing, assumptions are made about the identity (situated identity) that the beginning teacher will need to assume.

Paechter and Head (1996) argued that the subject of Design and Technology is recognised in many schools, by both staff and students, as a marginal or low-status subject. This is as a result, as argued by Paechter and Head, of the teaching of physical skills rather than with the transmission of academic knowledge (Paechter & Head 1996, p. 27). This dated perception has resulted in Design and Technology teachers being viewed in the past as being able to engage those students, particularly boys, who are less academically inclined and who present challenging behaviour. This view presents a particular inherent context into which beginning Design and Technology teachers transition where they are expected to: have highly developed skills in the use of a range of materials and equipment; and to engage students in ‘hands-on’ physical skills development rather than the transmission of academic knowledge.

The provision of appropriately resourced teaching spaces is a fundamental resourcing requirement in supporting the delivery of the Design and Technology curriculum (Barlow 2012). Increasingly, Design and Technology classrooms need to offer specialised equipment and materials and the knowledge and skills to teach with and maintain this equipment is becoming increasingly complex. In some schools, restricted budgets dictate the quantity and type of equipment and materials purchased. As a consequence, teachers may find themselves limited in what and how they teach. Additionally, the rigorous demands of OHSW impose safe workplace responsibilities on beginning and in-service teachers beyond that experienced by Design and Technology teachers of the past.

According to Barnes and Chester (2002), supportive and well-resourced school contexts are a significant factor in enabling Design and Technology teachers to implement innovative curricula. In light of the tensions and dilemmas that may confront beginning Design and Technology teachers, as addressed earlier in this thesis, the significance of a supportive and well-resourced school contexts needs to be
highlighted for without it, the opportunity and freedom to teach in innovative ways (or in ways beginning teachers would like to teach) is likely to be problematic.

The literature (Day, Harris, Tolley & Beresford 2000; Fernandez 2000; Flores 2004) has argued that there is widespread acceptance of the role that school leadership can play in developing school cultures that promote professional development for beginning teachers. A common trait of effective school leadership is the ability to build, promote and maintain a professional school community through which teachers, including beginning teachers, are able to develop a sense of self-efficacy and self-worth (Fernandez 2000). Fernandez (2000) argued further that effective leadership works in collaborative ways to create common goals, a vision for the future and standards for the school.

2.4.6.1. Teaching contexts – Issues of gender

The gendered nature of Design and Technology education is long standing. Wajcman’s (2000, 2004) research has argued that the concept of technology is based on male-oriented pursuits and traditions and that these aspects continue to define Design and Technology education. Paechter and Head (1996) also highlighted the relationship between the physical nature of Design and Technology and hegemonic masculinity. The making and taking home of crafted artefacts as argued by Paechter and Head (1996, p. 26) acts as a symbolic claim to parental recognition of one’s manhood, a reflection of the importance of physical work to working class masculinity.

Here the connection between working-class male student images of masculinity is closely related to working with one’s hands. Indeed, prior to 1980, Design and Technology (Technical Studies) was only taught to boys, in preparation for employment in industry and girls were taught Home Economics in preparation for home duties. The gender imbalance in the study of Food and Textile Technologies and Materials Technologies continues to be reflected in Australian secondary schools. Similarly, the number of female students who choose to study Design and Technology declines significantly when it is no longer compulsory, that is, beyond Year 10 in the majority of secondary schools.
When identifying the various stakeholders who could have a more significant place in shaping Design and Technology education, Layton (1994) identified women and girls, suggesting that a prime requirement of Design and Technology education should be that it helps counter gender bias, and that it should enable females to have an equal voice in the representations of technology. However, it appears that in the last 20 years little has changed and the gender divide in subject choices continues to exist.

Arguments regarding the under-representation of women in secondary teaching and particularly in leadership roles have also been espoused for many years (Connell 1985; Casey & Apple 1989). However, female representation in the teaching of Design and Technology education in Australian schools continues to remain minimal. Paetcher and Head stated that female Design and Technology teachers are a minority group, with their research identifying that these women are still seen as pioneers in a male world (Paetcher & Head 1996, p. 28). To move forward, as argued by Wajcman, it is necessary to:

... bridge the common polarisation in social theory. Technology must be understood as part of the social fabric that holds society together; it is never merely technical or social. Rather technology is always [a] socio material product – a seamless web or network combining artefacts, people, organisations, cultural meanings and knowledge.

(Wajcman 2004, p. 106)

While research into this area in Design and Technology has been limited, it can be argued that issues of sexuality, sexism and isolation are seen as barriers to increasing the number of female Design and Technology teachers. The percentage of females who enrol in the Bachelor of Education, Design and Technology program at the university in which this study is situated has fluctuated from year to year with an average of 20%. One aspect of this study is to explore how one female beginning Design and Technology teacher makes the transition into teaching and to identify if any gender-specific influences come into play as she makes that transition.
2.4.6.2. Teaching contexts – The emotional work of teaching

An integral part of the development of professional identity is the role of emotion (Fetherston 1993, 2006; Britzman 2003; Flores & Day 2006). Through their study of beginning primary teachers, Flores and Day emphasised the role of emotion in shaping teachers’ professional identity concluding that emotion is a significant and ongoing part of being a teacher (2006, p. 220). Britzman argued further that teaching is a deeply emotional process, and suggested that when teachers commence teaching they find that one of the greatest surprises in learning how to teach is how deeply an emotional experience it is (2003, p. 22). Nias (1996) argued further that the emotional reactions of teachers to their work are connected to the views they hold of themselves and others. As a result, emotions play a significant role in the beginning teachers’ experiences of tension and the stress that can accompany such tension.

The emotional turmoil that confronts beginning teachers is clearly depicted by Fetherston who argued that in the first year of teaching, beginning teachers:

... learn about themselves, especially about themselves as teachers. They often struggle both intellectually and emotionally with these newly revealed selves, and endeavour to change them – all this in virtual isolation, armed only with images of themselves, of teaching, and of schools, the words of professors, spouses, fiancés, parents, siblings.

(Fetherston 1993, p. 110)

The sense of isolation identified in Fetherston’s argument was also evidenced in the research of Groundwater-Smith et al. who, when discussing the nature of the emotional work of beginning teachers, identified issues such as the overwhelming sense of being on your own (Groundwater-Smith et al. 2007, p. 113). This is due to the fact that teachers take responsibility for planning, teaching, establishing class routines, developing professional relationships with students and dealing with inappropriate behaviour. Groundwater-Smith et al. also acknowledged that the intensity of teachers’ emotional work can increase when beginning teachers are placed in schools of severe disadvantage or isolation, or in schools where the beginning teachers’ background and culture is very different from the prevailing culture (Groundwater-Smith et al. 2007, p. 115).
Britzman (2003), Zembylas (2003) and Groundwater-Smith et al. (2007) have acknowledged that increasing recognition is being given to the emotional work of teachers, particularly as it relates to teacher resilience and retention. However, there is little research that has specifically addressed the field of beginning Design and Technology teachers and the emotional work of teaching. This research will respond to this identified gap in the literature.

2.5 Summary

The first part of this chapter has reviewed existing research in the literature and theories of identity and identity formation. It concluded that to define identity with conciseness is both challenging and complex. It identified that aspects of identity include: a sense of continuity, that is, the aspects that remain the same over time; aspects that provide uniqueness from others; and aspects that provide a sense of affiliation or sameness (Erikson 1980; Wenger 1998). The narrative rendering of identity (Connelly & Clandinin 1987, 1999; Clandinin 1992, 1993, 2007; Clandinin & Connelly 1996, 1998) was also explored in this chapter as a prelude to examining the identity transition of participants through the stories they tell and by which they live (Clandinin 2007).

The second part of the literature review has examined the literature that was more specifically concerned with teacher professional identity. It concluded that teacher professional identity formation is recognised as a relational and dynamic process that is multifaceted in nature. Furthermore, the review of literature found that professional identity emerges in and through the use of narratives that we create and tell about our lives (Bauman 1996; Clandinin, 2007; Cohen 2008). The implication of such a view is that one should think about identity, particularly for beginning teachers who are establishing their sense of self in the role of teacher, as an ongoing process of identification. The beginning Design and Technology teachers who participated in this study would have been in a state of professional identity transition as they found themselves responding to new experiences and interacting with colleagues, students and the wider school community. The significance of this study is in the examination of both the dynamic nature of this transition and the influences that contribute to the dynamism.
The review of the literature has identified a number of gaps in the research: of major significance is that much of the research is not specific to the context of Design and Technology education. While much has been written about the place that Design and Technology education should play in meeting the needs of a technologically literate society (see e.g. Kimbell & Perry 2001; Martin 2008; Barlex 2011), there has been limited research about the teachers who teach Design and Technology and, more specifically, about the influences that shape their beliefs, values, understanding and knowledge of the subject. This study has addressed this limitation in the knowledge about beginning Design and Technology teachers. Additionally, the area of Design and Technology education is in a period of significant curriculum and pedagogic transition (Williams 2002) and understanding the ways in which beginning teachers respond to these changes also represents a significant contribution to the knowledge.

In response to the identified curriculum transition, Reynolds (1996), Coldron and Smith (1999) and Fetherson (2006) have argued that beginning teachers can be confronted with in-service teachers who are not only reluctant to change but who are not always supportive of those who want to embrace new curriculum and new technologies. This reticence may present a tension for beginning Design and Technology teachers.

The lack of research that has explored this possible tension therefore has invited a study to investigate if beginning teachers in the field of Design and Technology education are able to exercise personal control in their thinking and their actions during this time of educational change and as they make the transition into professional practice. Similarly, studies exploring the ability to self-author (Sloan 2006; Soreide 2006) and its influence on the development of identity for Design and Technology teachers do not appear in the literature: an exploration of this issue represents a further contribution to knowledge.

A number of studies (Bullough & Gitlin 1995, 2001; Bullough 1997, 1999, 2005; Beijaard et al. 2004) have researched the role that teacher education programs play in preparing beginning teachers; however, there have been limited studies that have researched the role of teacher education programs in preparing specialist teachers of Design and Technology education: this research has addressed this identified gap.
Finally, there appears to be no research that has specifically investigated the relationship between tenure of employment and the development of the professional knowledge of beginning Design and Technology teachers. This research has contributed to this gap in knowledge.

The following chapter describes the research methodology used in the study to illuminate the questions and issues that have been highlighted through the review of the literature.
Chapter 3
Methodology

3.1 Introduction
This chapter describes and justifies the research methodology and research design employed in the study that forms part of this thesis. The questions examined in this thesis are concerned with the development of Design and Technology professional identity and the ways in which early-career Design and Technology teachers construct and reconstruct their perceptions of professional identity as they make the transition from final-year university pre-service teachers to first-year in-service teachers. More specifically, this study has aimed to examine the influences that shape the constructions of professional identity of participants during this period of transition. Thus, this study adopted an interpretive, qualitative research methods approach combining narrative inquiry and case study methods. This reflected that it was characterised by concern for the individual and, more specifically, the interaction between individuals and their social contexts, that is, the schools in which participants had commenced their first year of teaching.

The chapter is structured in the following way. Firstly, the research methodology employed in the study is described and justified. Secondly, the specific research design is described and justified. This includes details of settings, participants, data, data collection and analysis methods. This section also includes measures taken to ensure the validity, trustworthiness and credibility of the data, and an ethical stance towards participants, and describes the strengths and limitations of the research design.

3.2 Rationale for the research methods and research design
This study adopted an interpretive, qualitative research methods approach combining narrative inquiry and case study methods. The documentation that follows provides a rationale for the choice of research methods and commences with a description and justification for the adoption of interpretive inquiry.
3.2.1 Interpretive inquiry – A methodology of connectedness

Interpretive research has its roots in hermeneutics, historically seen as the study of texts, but which has evolved in more recent times as: the theory and practice of interpretation and understanding in different human contexts (Wiseman 1990, p. 111). It is through the adoption of an interpretive paradigm that the researcher has aimed to get inside the person to understand from within (Cohen, Manion & Morrison 2007, p. 21). Examining how early career Design and Technology teachers construct and reconstruct their perceptions of their professional identity is a crucial part of the research.

The paradigms (Lincoln & Guba 2000) and world views (Creswell 2007, 2009) that have guided this research are based on the notion of social constructivism (Lincoln & Guba 2000; Neuman 2000; Schwandt, 2007). Participants in this current study were viewed as seeking to understand the world in which they worked, and the individually constructed meanings made by participants were seen to be subjective. That is, they were related to individual experiences in a particular context and formed through a process of interaction with others as well as through the historical and social norms that operate in one’s life (Creswell 2007, p. 8). Through adopting a social constructivist focus, this research has examined participants’ processes of interaction with others and, furthermore, it has focused on this interaction in the context of schools. This examination attempted to make sense of the meanings that participants held in defining both who they were and their emerging professional teacher identity.

However, this research also contained a particular action agenda (Creswell 2007, 2008, 2009) in that it sought to explore the opportunities that participants in the study had to self-author or to be active agents in shaping their own meanings of professional identity, that is, whether they had the opportunity to be the teacher that they want to be and to teach in ways that they want to teach. As a result, this research also adopted an advocacy or participatory world view (Creswell 2007, 2008, 2009) in that the study recognised that research inquiry is also linked to the politics and political agendas within educational and societal contexts.
As argued in Chapter 2, the micro-political aspect (Findlay 2006), or the power relationships within the context in which each participant taught, could be influential in shaping beginning teachers’ professional identity. The research has argued that the gendered nature of Design and Technology education (Paechter & Head 1996); the historical and traditional influences (Williams 2006; Pavlova & Smith 2003); and the low status (Paechter & Head 1996) in which this learning area is viewed by some members of school leadership teams are the micro-political elements that relate specifically to the field of Design and Technology.

Thus, the world views of social constructivism (Lincoln & Guba 2000; Neuman 2000; Schwandt 2007) and an action agenda (Creswell 2007, 2008, 2009) have underpinned the research design adopted in this study. In addition, the view espoused by Carr and Kemmis (1983) and Cohen et al. (2007) has also been incorporated. This is due to the fact that interpretive approaches have much to contribute to educational research because they provide opportunities for deeper and richer insights especially for those who seek to act in more informed and enlightened ways.

3.2.2 Approaches to inquiry – A qualitative research methodology

To achieve a rich and detailed portrayal of how participants construct and reconstruct their perceptions of professional identity, a qualitative approach to the research was adopted, combining narrative inquiry and case study methods. Berg captured the characteristics of qualitative methodologies when he stated:

\[
\text{Quality refers to the what, how, when, and where of a thing – its essence and ambience. Qualitative research thus refers to the meanings, concepts, definitions, characteristics, metaphors, symbols, and descriptions of things.}
\]

(Berg 2001, p. 3)

Qualitative research can be defined as being: [m]ulti-method in focus, involving an interpretive naturalistic approach to its subject matter (Denzin & Lincoln 1994, p. 2). It is argued further that the qualitative researcher attempts to make sense of or interpret phenomena in terms of the meaning that people bring to them (Denzin & Lincoln 1994, p. 2). The work of Denzin and Lincoln (1994) was expanded by Creswell who emphasised the complex, holistic nature of qualitative research:
Qualitative research is an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem. The researcher builds a complex, holistic picture, analyses words, reports detailed words of informants, and conducts the study in a natural setting.

(Creswell 1998, p. 15)

More specifically, Creswell (1998, 2007, 2008), Berg (2001) and Denzin and Lincoln (2003) identified a number of assumptions which underpin qualitative research. These comprised the following: that reality is socially constructed and events need to be viewed from the multiple perspectives of participants; that the researcher is an instrument of data collection who can have a close relationship with participants but needs to acknowledge explicitly the value-laden nature of the study; and that the detailed words of participants are appropriate in reporting the study.

These assumptions are congruent with the circumstances and intentions of this study in that it used narratives to focus on the perceptions of professional identity of participants. It also recognised that the researcher as Program Director of the Bachelor of Education, Design and Technology Education had, to some degree, been a participant in the shaping of participants’ professional identity and therefore needed to acknowledge and address her own biases and values throughout the study.

3.2.3 Narrative as a methodology

The field of narrative study is sometimes termed ‘narratology’ (Connelly & Clandinin 1990; Doecke, Brown & Loughran 2000) and it has been applied across areas such as anthropology, drama, art, theology, psychology, linguistics and biological science, with each developing discipline-specific procedures. The study of narrative is the study of the ways in which humans experience the world. Creswell elaborates further and argued that narrative design involves drawing portraits of individuals and documenting their voices and their visions within a social and cultural context (Creswell 2008, p. 513).

Over the last two decades, the use of narrative research has drawn on teachers’ stories to produce detailed understanding about teaching and teacher identity (Connelly & Clandinin 1987, 1999; Elbaz 1991; Clandinin 1992, 2007; Carter 1993; Clandinin & Connelly 1995, 1998, 2000). These researchers have argued that narrative is
especially suited to conveying the complexities of the classroom, the nature of teachers’ knowledge and the development of professional identity. For this reason, the adoption of a narrative methodology was deemed the most relevant and appropriate to achieve valid and insightful findings for this study. More specifically, the use of a narrative methodology enabled the collection and re-telling of the stories of participants with a high level of authenticity.

In Chapter 2, the phenomenon of professional identity formation was defined as an ongoing process that emerges in and through the use of narratives that we create and tell about our lives (Watson 2006; Creswell 2007, 2008, 2009). In other words, as argued by Watson: people construct narratives and narratives construct people, and our identities emerge through these processes (Watson 2006, p. 510). When implemented as a research methodology, narrative: begins with the experiences as expressed in lived and told stories (Creswell 2007, p. 54).

However, the stories told in narrative research are typically the re-told (by the researcher) stories of just one person and their experiences. Furthermore, these stories are characteristically focused on individualised experiences, for example, Kelchtermans’ (1993) story of one primary teacher’s career breakdown, or Whelan’s (1999) story of one teacher’s marginalisation within a school. While this study has analysed the stories from participants’ individual narratives, it has also sought to provide an analysis across narratives, through identifying themes, patterns, commonality and disjuncture. As a result, this study has adopted both a narrative and case study research methodology as it was the researcher’s belief that this approach would facilitate insights that had both breadth and depth. Therefore, the study provides both a collective and individualised account of professional identities as participants transitioned into the role of beginning teacher.

This study did not follow a lock-step approach when conducting narrative research (Creswell 2007, 2008). Once participants were identified, the researcher spent considerable time with each of them, gathering their stories (Clandinin & Connelly 2000) via focus group discussions, individual interviews and personal e-journals. Each story reflected a number of specific contexts, namely, the university; the school
in which the participant was teaching; their personal experiences in those contexts; and their personal historical contexts.

3.2.4 The collective case study – A bounded phenomenon

Clandinin (2007) argued that qualitative case study has emerged as a critical part of the pedagogy of law, business, medicine and education. When applied to research in education it has often been focused on teaching issues or dilemmas. Merriam (1988) argued that a qualitative case study is an intensive, holistic description and analysis of a bounded phenomenon such as a program, an institution, a person, a process or a social unit (Merriam 1988, p. xiv). While case studies often use qualitative data, a key difference from other research methods is that case studies do not attempt to control the context (Yin 1994). This enables the researcher to study contemporary phenomena in a real-life setting, where boundaries between context and, in this instance, the bounded phenomenon tend to be blurred (Yin 1994; Stake 1995).

In this case study, a group of beginning Design and Technology teachers represented the bounded phenomenon. In other words, participants were bound by: the experiences of being recent graduates from the same undergraduate teacher education program; the activity of being beginning teachers teaching Design and Technology education in secondary schools; and the 15-month duration of this study. Stake (1995, 1998) defined this as a collective case study and argued that its utilisation could lead to not only a better understanding of the phenomenon itself but also of the phenomenon within a larger group than was originally identified. Stake argued further that:

*Previously unknown relationships and variables can be expected to emerge from case studies leading to rethinking of the phenomenon being studied. Insights into how things get to be the way they are can be expected to result from case study research.*

(Stake 1995, p. 47)

Simons argued that this is the paradox of the qualitative case study adding that: *by studying the uniqueness of the particular, we come to understand the universal* (Simons 1996, p. 250).
This collective case study research has portrayed complexity in context (Smith 1999) in that it illustrates the complexities of the phenomenon of teacher professional identity. The study investigated more deeply the research identified in Chapter 2 that had argued that many factors contribute to and influence beginning teachers’ professional identity (Beijaard, Meijer & Verloop 2004; Alsup 2006; Beauchamp & Thomas 2009). This study also sought to establish the different or specific factors that contributed to and influenced these beginning Design and Technology teachers’ perceptions of professional identity. As a result, this collective qualitative case study can also be characterised as heuristic, that is, it can support the reader’s understanding of the phenomenon being studied (Merriam 1988).

In this instance, the purpose of the case study was to confirm what was already known about beginning teachers’ transition into teaching, and to discover new meanings for consideration by the education profession and, in particular, for the field of Design and Technology education. It is argued that the application of the identified methodology would allow the flexibility required to accommodate the diversity and complexity of narratives provided by participants.

### 3.3 The researcher’s role

While recognising that narrative inquiry is a form of qualitative research that uses a collection of stories as its source of data, it can also be argued that for some researchers the research narrative becomes a co-created text between participant and researcher. Creswell argued further that *the story of the researcher may also be interwoven into the final research report as she gains personal insight* (Creswell 2002, p. 526).

Participants in this study were viewed by the researcher as active participants in the research process and as equal partners with the researcher. However, it was recognised that the researcher was *the owner of a significant voice, a carrier of a cultural message that could have great impact on (participants’) actions* (Sfard & Prusak 2005, p. 17) and possibly on the stories told by participants. Although every effort was made to ensure objectivity, the researcher also acknowledged that her personal values, assumptions and bias may have shaped the way she viewed and
understood the data. The strategies that the researcher implemented to minimise this effect are addressed later in the credibility and trustworthiness section in this chapter. It was recognised that participants in this study had firsthand experience with the phenomenon of professional identity and as such were the holders and makers of knowledge (Connelly & Clandinin 1999). The role of the researcher was to capture, record and report on this transition into the profession, to inform both individuals and the field of Design and Technology education. The lived and told experiences of participants in this study provided the researcher with insights into not only the experience itself, but the way participants made sense of their experiences. The researcher began this study with the view that the first year of teaching was critical in shaping the professional identity of beginning teachers. The researcher also questioned how much voice beginning teachers had in this process of transition, and posed the question: “are participants able to self-author and be the teachers they want to be?”

3.4 Research design

In order for this research to capture the ways in which beginning Design and Technology teachers constructed and reconstructed their perceptions of professional identity as they made the transition from final-year university pre-service teachers to first-year in-service teachers, the research was conducted in two stages; the university stage and the in-school stage. This section describes and justifies the specific details of the research design used and includes the researcher’s choice of settings, participants, data collection methods and data analysis processes for both stages of the research. This is followed by a description of the measures taken to ensure validity and credibility of the data, and an ethical stance towards participants. The chapter concludes by identifying the strengths and limitations of the research design. The section commences with a description of the research settings.

3.4.1 Settings

The first stage was conducted on the campus of the university in which participants had recently completed four years of undergraduate study in either the Bachelor of Education, Design and Technology program or the Bachelor of Education, Primary/Middle (3-9) program. With graduates having emerged only in the past four years, both programs were relatively new. The relative newness of the programs and
the researcher’s involvement in the inception, design and delivery of the Bachelor of Education, Design and Technology provided motive for the location and choice of participants. As a consequence, the researcher identified participants who majored in Design and Technology education in either university program and who intended to teach Design and Technology in secondary settings. The researcher’s choice to work with participants who identified Design and Technology education as their major teaching specialisation was deliberate and, in part, in response to concerns expressed in the body of literature about the teaching of Design and Technology, its perceived status as a subject within the school and the community as well as calls for a new type of Design and Technology teacher (Barlow 2002, 2012; Staples 2003).

The setting for the second stage of this study was dictated by the schools in which participants had commenced teaching. However, the emphasis for this study was not on the setting itself, in that participants were not observed in action in these settings. Instead, this stage sought to examine, through the narratives of participants, the degree to which they perceived that the settings had shaped and influenced their perceptions of professional identity and, more specifically, had enabled them to be the teacher that they wanted to be.

The school settings were diverse and included schools in both rural and metropolitan settings; State Government schools, and Catholic and Independent schools. The commonality for each setting was that Design and Technology education was taught as part of the secondary school curriculum. Table 5.1 in Chapter 5 provides a more detailed account of the context in which each participant commenced teaching.

**3.4.2 Participants: Stage 1 – University stage**

Participants for Stage 1 of this qualitative, narrative, case study comprised 20 beginning Design and Technology teachers who had recently completed their final year of a four-year undergraduate teaching program with a teaching major in the field of Design and Technology Education. The participants comprised six females and 14 males who ranged in age from their early 20s to their late 30s. Six participants had completed a major in Design and Technology Education as part of the Bachelor of Education, Primary/Middle. The remaining participants had completed what equated to a double major in Design and Technology Education as part of the Bachelor of
Education, Design and Technology Education program. Five participants had studied courses in food and textile technology (Home Economics) only with the remaining 15 studying in the areas of electronics, resistant materials (including wood and metal) and CAD/CAM. All 20 participants studied design as a core methodology for teaching in Design and Technology education. Eleven participants had entered the teacher education program as mature-aged students with seven participants having previously worked in industry-related trades such as dressmaking, cabinet making, plumbing, auto-electrics and hospitality.

All final-year Design and Technology pre-service teachers were approached as a group during their final university seminar. Although all teaching had ceased after that final week, several pre-service teachers had assignments that needed to be assessed by the researcher and, for this reason, an independent party met with the class to outline the research project and seek expressions of interest from those who would like to be contacted once all marking and university-related issues were completed. The expression of interest form was distributed by the independent party. The expression of interest form asked for contact details and to indicate an interest in being contacted by the researcher to obtain more information about the study. This expression of interest form was not a formal commitment to be involved in the study.

Once collected, the expression of interest forms were kept in a sealed envelope in the office of the independent party until pre-service teachers had completed all aspects of university study. Once completion had occurred, the envelope was opened by the researcher. Those who had completed the expression of interest form were contacted by the researcher via email or telephone. A time was organised to meet individually with the researcher to discuss the study further with a view to completing the consent form.

The number of pre-service teachers who were in their final year of study in the Design and Technology program was 30: of these, 20 pre-service teachers indicated, via the expression of interest form, that they were willing to be contacted with the potential of becoming participants. All 20 participants who were contacted by the researcher volunteered to be participants in Stage 1 of the study. As the purpose of the study at this stage was to gain a more general and broader insight into
participants’ perceptions of professional identity, the researcher considered that it would be valuable to include all participants who volunteered regardless of whether they had specialised in Design and Technology or Home Economics.

3.4.3 Participants: Stage 2: – In-school stage

A smaller group consisting of 10 of the 20 participants were selected for the in-school phase of the research. Table 5.1 in Chapter 5 provides a more detailed account of each of the in-school participants. The basis of selection for the smaller group included the desire to include a broad sample in terms of factors such as:

- subjects taught – wood, metal, electronics, ICT, CADD/CAM
- teaching location – metropolitan or country location
- type of school – Independent, Catholic or public (DECD)
- gender
- personal and professional history of participants, for example, trade background, school leaver.

The aim of this reduction in participant numbers was to keep the data to a manageable scale but, more importantly, to ensure the data represented the diversity of participants who graduated from the Bachelor of Education, Design and Technology Program with a Design and Technology teaching focus. While the researcher acknowledged that the inclusion of the Home Economics participants who had participated in Stage 1 of the study could have added further depth to the study, it would have also added complexity and may have impacted on the validity of the findings. As the subject knowledge, curriculum and teaching contexts of Home Economics varied from those of Design and Technology in South Australian secondary schools, participants from Stage 1 of the study who taught food and textile technologies and child and community study were excluded from this, the second phase of the data collection.

3.5 Data and data collection methods

The section that follows provides a rationale for and explains in detail the methods and processes of data collection for both stages of the study. It introduces the CReTE (Centre for Research and Development in Teacher Education) Framework of Teacher
Professional Knowledge (Banks & Barlex 1999; Banks, Leach & Moon 1999) which was implemented in this study as a basis for examining participants’ emerging professional and pedagogical knowledge and professional identities. Focus group and interview questions and schedules are also presented. The section commences by outlining the primary source of data and data collection methods.

The primary data sources for both stages of this study were the narratives of participants and the written responses to the questionnaire and the teacher professional knowledge framework. The data collection methods implemented for this study were:

- a questionnaire that included open-ended, text response questions
- the completion of a teacher professional knowledge framework
- focus group discussions,
- semi-structured interviews
- reflective e-journal entries.

The data collection methods were methods that were deemed by the researcher to be the most conducive for producing data that would address the aims and specific foci of the study. The practicality of the identified methods was also acknowledged in terms of access to and demands on participants and the researcher.

Data were collected over a period of 15 months, that is, from when participants completed their last university course, in the final year of their study, to the end of their first year of in-service teaching. This time frame enabled the emphasis of data collection to be placed on the transition period for participants as they moved from being a pre-service to an in-service teacher. Data collection throughout the first year of teaching enabled changes in thoughts and ideas in regard to their perceptions of professional identity throughout this year to be documented, reviewed and elaborated upon. The methods of data collection implemented for Stages 1 and 2 of this study were as follows.
Stage 1 – University stage

- Questionnaire comprising three open-ended, text response questions (20 participants; six females and 14 males)
- Completion of a teacher professional knowledge framework (20 participants)
- Focus group discussions (2 x 10 participants)

Stage 2 – School-based stage

- Semi-structured interviews (3 interviews x 10 participants; one female and nine males)
- Reflective e-journal entries (ongoing throughout the school-based data collection period x 10 participants)

3.5.1 Data collection processes

Stage 1 – University stage

After the group of 20 participants had accepted the invitation to participate and had read, signed and returned the consent form, they were sent (posted) an open-ended, text response questionnaire. The text response questionnaire comprised two parts:

Part A: Three open-ended questions that focused specifically on the phenomenon of professional identity development; and

Part B: An adapted version of the CReTE (Centre for Research and Development in Teacher Education) Framework of Teacher Professional Knowledge (Banks & Barlex 1999; Banks, Leach & Moon 1999).

The questions posed in Part A of the text response questionnaire were:

1. What is your perception of your professional identity as a beginning Design and Technology teacher as you leave university?
2. What do you believe are the factors that have shaped your professional identity to this point?
3. What factors do you think will continue to influence this perception once you commence teaching?
Part B of the text response questionnaire, the CReTE Framework of Teacher Professional Knowledge (Figure 3.1), was originally developed by the Centre for Research and Development in Teacher Education (CReTE) at the Open University located in Milton Keynes to assist pre-service teachers to visually represent their understanding of professional knowledge and to assist them in considering aspects of their classroom practice. As discussed in section 2.4.4, the rationale in developing the original model was the belief that establishing a shared agreement about teacher professional knowledge for Design and Technology could help pre-service teachers to reflect on their practice and facilitate discussion between beginning teachers and more experienced in-service teachers.

![Figure 3.1 The CReTE Framework of Teacher Professional Knowledge](Banks & Barlex 1999; Banks, Leach & Moon 1999)

While the original framework (Figure 3.1) provided the opportunity for collecting data related to professional and pedagogical knowledge, it did not facilitate the collection of data that related to the influences on the development of that knowledge or how those influences might serve to enable participants to self-author or be the teacher that they wanted to be. As a result, the original framework was amended to address the identified focus of this study through replacing the original school subject knowledge aspect with a question that sought to investigate the influences within the
school context that might serve to enable participants to self-author or to be the teacher that they wanted to be.

The CReTE Framework of Teacher Professional Knowledge (Banks & Barlex 1999; Banks, Leach & Moon 1999) also identified personal constructs as a culmination of subject, pedagogic and school knowledge. For this study, personal constructs were amended to capture how participants viewed themselves as beginning teachers.

Drawing on this adapted framework, participants were asked to document the following:

- the subject knowledge they believed facilitated professional identification as a Design and Technology educator
- the pedagogical knowledge they believed they would need to develop to enable them to become effective Design and Technology educators
- the influences in a school that they believed could impact on enabling them to be the teacher that they wanted to be
- personal constructs of their professional identity as a Design and Technology educator, that is, how participants saw themselves professionally as beginning teachers.
Participants were asked to bring their written responses to the adapted teacher professional knowledge framework and the three questions to the focus group for further discussion. Data from both the written and verbal responses were collated and analysed.

Collated data from the adapted teacher professional knowledge framework and the research questions continued to be used throughout the research study as a reference tool to facilitate ongoing discussion, comparison and reflection not only for the focus group discussions but also for the semi-structured interviews and the e-journal entries in the school-based phase of the study.

3.5.1.1 Focus groups

The use of focus groups for this study reflected a view by the researcher that such a method could provide a dynamic in which participants learnt from each other and developed ideas together (Jackson, 2003). It was hoped that the focus group sessions could lead to discussions that would provide points of commonality, agreement or possibly raise issues not previously considered by the researcher. This method was
particularly relevant to the study as the participants were a cohort who had a history of cohesion and group discussion.

The purpose of the focus group was also to foreshadow or set the scene for Stage 2 of the study. This occurred at several levels. Firstly, it was hoped that as participants discussed and shared their views with peers, they would develop a connectedness with the study in personal and meaningful ways. Secondly, for participants who continued into Stage 2 of the study, there was an established understanding of what the study was about and this understanding could be developed further in subsequent interviews. The outcome of the focus groups discussions also became the basis for generating interview questions in Stage 2 of the study.

Participants were asked to attend one of two focus group interview sessions. The focus groups were divided into two groups of 10 as the researcher felt that a group of 20 participants would be too large to facilitate an inclusive discussion in which every participant could have the opportunity to actively contribute. The focus group sessions took place at the university campus for a two-hour period for each group. Written responses to the adapted teacher professional knowledge framework and the three open-ended questions provided the starting point for the group discussion. Participants’ verbal responses during the focus group sessions were recorded and later transcribed. Hard copies of participants’ responses to the adapted teacher professional knowledge framework and the questions were collected, collated and analysed by the researcher.

The focus group discussions were conducted before participants had commenced teaching which meant that the timeline to meet with participants between completing university and commencing teaching was very short. Many of the participants went on holidays or back home if they were from country locations. However, it was important to complete the focus group discussion before participants started teaching, as the purpose of this session was to examine participants’ perceptions and beliefs about teacher professional identity before they entered the school setting and were possibly en-cultured or socialised (Rust 1994; Reynolds 1996; Coldron & Smith 1999; Fetherson 2006) into the ways of the school.
3.5.1.2 Stage 2 – In-school stage

Semi-structured interviewing

The researcher chose to use semi-structured interviewing as a data collection strategy for this study as an acknowledgment of the demanding and complex lives that participants would have as beginning teachers. The researcher wanted to optimise the limited time with participants by ensuring that the information sought was directly relevant to the focus questions for the study and, at the same time, providing opportunity for participants to guide the interview in their own direction and to provide as much information through their stories as possible. The researcher wanted to draw on the freedom that semi-structured interviews provided to respond to the situation at hand, to the emerging worldview of the respondent, and to new ideas on the topic (Merriam 1998, p. 75). Thus, the questions asked at each interview were open and few in number and the response to each determined the direction of subsequent conversations. As a consequence, the semi-structured interviews were designed to instigate conversation, dialogue and stories rather than exact answers.

Three semi-structured interviews were conducted with each of the 10 participants at regular intervals throughout their first year of teaching. Interviews were held during Week 6 of Term 1, the end of Term 2 and the end of Term 4. All interviews were taped and transcriptions made. While the majority of interviews were held at the school setting in which the participant was teaching, one participant asked to hold the three interviews in the researcher’s office at the university. The reason for the change of location was the proximity of the office to the participant’s home address. For the one participant in a country location, interviews were conducted through phone calls or via email communication.

Interview 1

The purpose of the first interview was to gain an insight into what the first few weeks of teaching had been like for each participant. The question asked was designed to identify the success, tension, challenge and emotion associated with the first six weeks of teaching. The researcher asked only one question for the first interview:

1. *Tell me about the good, the bad and the ugly of the first six weeks of teaching!*
The open-ended nature of the question and the light-hearted way in which it was presented were to put participants at ease and to facilitate an honest and participant-led conversation that would elicit narratives of actual experiences. However, as Creswell suggested: *sometimes you need to give thought to conversation* (Creswell 2008, p. 226). In this instance, the use of verbal prompts or probes and the reiteration of participants’ responses throughout the interview facilitated a deeper and more detailed elaboration into the described experiences (Creswell 2008).

**Interview 2**

The questions asked in the second interview were structured to elicit a detailed and collective account of the first six months of teaching. The questions provided the opportunity for participants to respond to themes regarding opportunities to self-author and to integrate their own identities into their teaching roles. The following questions were posed:

1. What has challenged you? Have these challenges impacted on how you perceive your professional identity?
2. What has been new learning for you?
3. Has anything been easier than you thought it would be?
4. Have you been supported in what you are doing?
5. How much of a say have you had in what you teach and how you teach it?

**Interview 3**

In the third and final interview, participants were encouraged to reflect on their initial perceptions and beliefs regarding the influences that were predicted to shape professional identity and compare these to the realities of the first year of teaching. The original responses provided before participants had commenced teaching were revisited as each question was posed. The questions asked in the third interview were:

1. What is your perception of your professional identity after a year of teaching?
2. In what ways has this changed throughout the year?
3. What have been the influences that have initiated these changes and are these the same as those you predicted while at university?
At the commencement of each interview, the researcher revisited previous interviews and invited participants to clarify, dispute or build upon the previous conversations. Throughout subsequent interviews, the researcher also invited participants to continue to build upon the conversations that had begun the year before participants had commenced teaching. All interviews were one hour in duration. Interviews were taped and transcriptions made.

3.5.1.3 Document review – e-journals

E-journal entries were used to follow up interviews and promote further conversation. E-journals in the form of reflective emails were used by participants to add thoughts or ideas that occurred to them between interviews. On several occasions, the researcher initiated a follow-up email to all participants while, on other occasions, participants would email to inform the researcher of a situation, an idea or just for the purpose of an informal chat. Similarities in the purpose of using reflective journals and e-journals could be drawn when compared to Holly and Smyth’s description of a reflective journal as:

*A comprehensive and systematic attempt at writing about ideas and experiences as near as possible to the time of their occurrence, so that over time, they might be revisited and examined for the overt and covert messages they contain.*

(Holly & Smyth 1989, p. 2)

While the e-journal entries provided an additional and immediate data source, the use was sporadic and varied, with several participants engaging with the online communication on just one or two occasions. For others, particularly the one participant in a country location, communication was more often, at least several times each term. The informal nature of the e-journal facilitated open and frank online conversation; it was through this method of data collection that the researcher felt that they could have an unintended role in influencing the professional identity of participants. For example, one participant emailed the researcher to debrief after a mandatory notification incident. The emailed response required some counselling and forced the researcher to reflect on her role as a possible mentor as well as a researcher.
Research on the duality of the role of the researcher has been limited but is explored through the work of Clandinin (2007). Clandinin argued that as researchers implement electronically-based research methods (e.g. emails, Facebook, Twitter) that are more informal and relate more closely to the ways in which participants communicate, the distinction between researcher, mentor, friend and counsellor can become blurred. This means that the role of the researcher has the potential to become interventionalist (Clandinin 2007), that is, to change the views of participants particularly in regard to questions of social justice. The researcher’s awareness of this possibility meant that, at all times, the researcher maintained a professional distance through limiting email contact and responses to those that were directly related to the focus of the study. As a consequence, the researcher was able to adopt a descriptive and not an interventionalist approach in collecting, collating and presenting the data.

Throughout the data gathering period, the researcher also kept a reflective journal (Creswell 2008) to document her own thoughts, notes and reflections in response to interviews, focus groups and e-journal entries.

3.7 Data analysis – Analysis through each storied case and across all cases

The type of data analysis adopted for this collective case study was narrative analysis (Yin 1994, 2003). As a distinct form of qualitative research, narrative analysis focuses on the study of the individual or a small group of participants. Data are gathered through the collection of stories that reflect the individual’s experiences and data are analysed through the re-telling or re-storying of participants’ stories, that is, the narratives of participants are re-told by the researcher. Described as a *unique qualitative analytic procedure used only in narrative research*’ (Creswell 2002, p. 52), this analysis through re-told narrative provided the researcher with a deeper insight into the experiences of the individual.

For example, in Chapter 5, Jason’s re-storied narrative of his professional relationship with his mentor provided insights into the emotional processes associated with beginning to teach. Thus, the data analysis was both a description of the story and themes that emerged from it. In re-telling and analysing the story, a chronology of events (Creswell 2002) occurred, that is, the story had a beginning, middle and
ending. Chronological information about the individual’s past, present and future was also included in the re-storying.

As a consequence of adopting a narrative case study approach to analysis, it was possible to adopt both a micro- and macro-analysis of the data (Creswell 2002). That is, while the intent of the analysis was to gain an insight into the experiences of individual participants (within the case), commonalities or differences in the experiences could also be identified across cases. Thus, while the within-case narrative analysis (Creswell 1998) provided a detailed account of each participant’s context and of the themes that emerged, an analysis of the entire case (across cases) also enabled a detailed description of the whole case to emerge (Stake 1995, 1998).

Data collection and analysis in this study were viewed as an iterative process that enabled constant comparison across and within the case studies. Data were also analysed and discussed in terms of their relationships with previous research (Denzin & Lincoln 1998, 2003). The analysis of data was also rich in context in that it was sourced from the setting in which the case presented itself (Merriam 1988).

3.7.1 The process of data analysis
Some analysis of data was completed throughout the data collection period as summaries of transcripts were prepared and initial interpretations were made. The results of this early analysis were used to guide subsequent data collection. For instance, the questions asked in the final interview were derived from themes identified from an earlier analysis of the data from Stage 1 of the study. Woods used the term speculative analysis (Woods 1986, p. 121) to describe the process of tentative reflection which occurs throughout data collection and claimed it could reveal major insights. These preliminary interpretations were also shared with participants at subsequent interviews for member checking.

To provide a framework that could analyse and interpret the collated data with depth and accuracy, a number of systematic procedures were implemented. Firstly, to gain a general sense of the content of the collected data, the researcher continually read through the written responses and transcripts conducting an analysis each time. Secondly, codes were used to identify broad meanings within the data. Similar codes
were identified and then grouped together. The number of codes was then reduced by merging those of similar meaning.

Thirdly, once the number of codes was refined, significant analytic categories (Bernard 2000) or themes and subthemes emerged. For example, in Chapter 4, professional knowledge had been identified as a key theme and, within this theme, a number of subthemes including subject content knowledge and pedagogical knowledge were also identified. Key themes, for example, the role of mentoring were also analysed from multiple perspectives (Plano, Clark & Creswell 2010) in an attempt to provide the viewpoints of a number of participants. A thematic analysis across the case, that is, a cross-case analysis (Creswell 1998) followed. The final phase of data analysis enabled the researcher to report on what lessons have been learned (Creswell 1998, p. 63) from the case. This assertions phase (Creswell 1998) was then analysed using the theories presented in the literature review.

To provide further depth and accuracy, the researcher analysed the data comprehensively at two distinct stages as reflected in the structure of the study. For Stage 1, the university stage, analysis focused on participants’ written and verbal responses to the three open-ended, text response questions and to the teacher knowledge framework. In Stage 2, the in-school stage, effort was taken to build a portrait of both the individual (Creswell 1998) and the collective. Thus, when analysing the data, greater emphasis was placed on individual narratives, and finding meaning in these narratives, followed by a re-storying of the narrative when presenting the analysis.

Although data collection and analysis were presented in two stages because they represented different conceptual stages of the research process, they also overlapped chronologically. For example, the focus group discussions and teacher framework guided the development of the case study interviews and communication for the e-journals. Analysis of the focus group discussion also guided what the researcher was seeking when analysing the case studies. The commencement of the writing process led to a further level of analysis: the emerging themes were developed, compared and contrasted with the research literature. Woods identified how the writing of the first draft of a research report continues the process of data analysis as improved ideas.
emerge throughout the writing and promising lines of thought are investigated (Woods 1986, p. 182). The writing of successive drafts provided further refinements of analysis.

3.8 Ensuring validity and reliability of the research

One of the main challenges for case study researchers in achieving validity is how to develop a well considered set of actions, rather than using subjective judgements (Yin 1994, p. 41). Lincoln and Guba (1985), Yin (1994), Stake (1995), Denzin and Lincoln (1998, 2003), Jackson (2003) and Creswell (2009) identified a number of criteria or actions for ensuring the validity, reliability and trustworthiness of naturalistic research data. These criteria were used in this narrative, case study research in a number of ways detailed below.

Prolonged engagement
The data collection period of at least 15 months constituted a significant period of engagement and enabled several cycles of data collection and analysis, each one probing further into the focus issues (Creswell 2002, 2009).

Member checking
Creswell (2002, 2009) and Jackson (2003) suggested that member checking involves participants in the data analysis by having them actually read the analysis and then refine it to be congruent with their experiences. Through member checking, the meaning of the data base is negotiated (Creswell 2002). In this research, member checks occurred in each phase of data collection. Participants had the opportunity to check for accuracy and comment on interview transcripts, notes from focus group meetings and on the researcher’s ongoing interpretations of data. In light of the researcher’s close professional relationship with the participants, this strategy was of major significance to guard against wrongly interpreting and analysing findings.

Triangulation
Triangulation can ensure validity through the adoption of a range of data collection methods that enable the phenomenon being examined to be viewed from different angles. Jackson defined triangulation as the use of multiple referents to draw conclusions about what constitutes the truth (Jackson 2003, p. 182). In this case
study, data were collected from the multiple sources of semi-structured interviews, focus groups and e-journals which enabled cross-checking to ensure internal validity (LeCompte & Goetz 1982). Triangulation (Denzin & Lincoln 1998, 2003; Jackson 2003; Creswell 2009) was achieved through cross-referencing the results from the three data collection methods. Participants were involved in reading the analysis of data: they were asked to refine the data, if they felt it was necessary, to ensure it was congruent with their narratives (Jackson 2003). These methods ensured that the descriptions of the phenomenon being studied were accurate and credible.

**Peer debriefing**

Peer debriefing (Creswell 2009) occurred on a regular basis with supervisors and interested colleagues. The transcripts and drafts of the evolving case studies were reviewed for consistency and accuracy. This strategy guarded against wrongly analysing findings and provided the opportunity for feedback and criticism of preliminary findings.

**Chain of evidence**

The methodology chapter of this study provides a clear chain of evidence (Yin 1994) that enables the reader to reconstruct how the researcher went from the initial research questions to final conclusions. Data collection circumstances such as the time frame, participant selection processes, difficulties in the collection process as well as a discussion of the data analysis procedures are provided as evidence of careful and rigorous data collection and analysis procedures.

Findings were conveyed using rich and thick or detailed descriptions to provide the reader with an element of shared experience (Creswell 2009, p. 193). This strategy enabled the results to be more realistic, strengthening the validity of the findings.

**3.9 Strengths and limitations of the research design**

The research design adopted for this study was subject to a number of strengths and limitations. The strengths were linked to authenticity, the richness of the data source and the triangulated nature of the research design. The potential limitations were linked to the close relationship of the researcher to the participants and the limited time for participants to engage in the study.
The settings in which each stage of the study took place were authentic, that is, they were the places in which the narratives physically occurred. The first stage was conducted on the campus of the university in which participants had recently completed four years of undergraduate study and the second stage in the schools in which participants had commenced teaching. As beginning teachers of Design and Technology education, participants in this study were authentic as they narrated the influences associated with identity transition and transformation associated with beginning to teach. These narratives also provided a source of rich data.

The qualitative approach that combined narrative inquiry and case study provided a suitable design method for this study in that it facilitated a rich and detailed portrayal of how participants constructed and reconstructed their perceptions of professional identity. In this case study, data were collected from the multiple sources of questionnaires, semi-structured interviews, focus groups and e-journals. This triangulated design ensured internal validity providing further strength to the research.

The researcher’s involvement with participants as a lecturer could have had implications for both the responses provided by participants and for objectivity in the interpretation of data. As an ethical researcher, it was important to disclose research interests and to acknowledge that these could affect this study. The researcher addressed this issue through the trustworthiness checks as outlined earlier: these included providing transcripts to participants (member checking) and peer debriefing. The researcher also acknowledged that involvement as a lecturer could have impinged on participants’ readiness to provide honest accounts of some aspects of their experiences. However, the researcher believes that the informal nature of data collection, particularly through e-journal entries, coupled with the prolonged nature of the study addressed these issues.

Another potential limitation to this study was the extremely hectic nature of the working lives of participants as beginning teachers which, at times, made it difficult for them to find the time to be interviewed or to maintain documentation through the e-journal. While a number of limitations have been identified for this study, they did not serve to threaten the value of the study in any way.
3.10 Ethical considerations

Ethical clearance for this study was obtained from the University of South Australia, the Griffith University Human Research Ethics Committee, the South Australian Department of Education and Children’s Services (DECS) and the Catholic Education Office and the Independent Schools Board.

Participants’ involvement was on a voluntary basis. Potential participants were invited to participate in the study via an expression of interest form (see Appendix 1). Participants who completed the form were contacted by the researcher via email or telephone and provided with a letter of invitation (see Appendix 2). This letter complied with the Guidelines for preparation: Human Research Ethics Protocols, University of South Australia and the Griffith University Human Research Committee. A time was organised for participants to meet individually with the researcher to discuss the study further with a view to completing the consent form (see Appendix 3). During the meeting, participants were informed that their participation was voluntary and that they had the right to withdraw from the research at any stage. Participants were assured of anonymity and confidentiality, through the use of pseudonyms. The sites in which participants commenced teaching were not identified. No research participants were under the age of 18. No reimbursement or payment was offered or given for participation in the study.

3.11 Data storage and retrieval

All collected data were treated as confidential. All data (audio tapes and documents including e-journals, questionnaires and responses to the teacher framework) are currently stored securely in Building G1-42 at the researcher’s university worksite. It is accessible only to the researcher and to authorised personnel such as the research supervisors. The data will be securely stored for a five-year period and then destroyed.

3.12 Summary

This chapter has provided an overview of the decisions made about the methodology used for this study and the processes that were implemented. It has provided a
rationale for the choice of a qualitative, narrative, collective case study research design. It has described and justified the processes used in data collection and analysis, and those used to ensure validity and trustworthiness of the data and an ethical approach to participants. Finally, it has highlighted the strengths and limitations of the study.

The four chapters that follow present the data analysis and findings of the study.
Chapter 4
Results and analysis overview

4.1 Introduction
This chapter is the first of four that present the results and analysis of the study in this thesis that investigated the constructions of beginning Design and Technology teachers’ professional identity and, more specifically, the influences that contributed to shaping this identity. The chapter commences with an overview of how the research findings are presented.

The analysis chapters present the results and analysis of two distinct stages located in a time frame of transition from university to in-service teaching. This chapter presents Stage 1 of the study which is the in-university stage. This stage captured 20 participants’ expectations, predictions and future thinking about their professional identity and influences on this identity before they commenced teaching. This stage is presented in two parts: Part A presents the results and analysis of the two focus group discussions which provided participants with an opportunity to respond to three open-ended questions. Part B presents the results and analysis of the written data captured through the responses to a framework for conceptualising teacher professional knowledge. Both parts analyse written and verbal responses.

Chapters 5, 6 and 7 present the results and analysis of the second stage of the study, the in-school stage. These stages present the findings of 10 participants, bounded as a collective case study (Yin 1994, 2003). Each of the chapters reflects distinct phases in participants’ transition and represents a chronological stage of data collection and analysis, commencing with the first six weeks of teaching, followed by the first six months of teaching and concluding at the end of the first year of teaching. The findings in these chapters no longer reflect participants’ predictions but are based on their reporting of the actual, lived experiences (Connelly & Clandinin 1999), as told through three interviews and presented through e-journal entries.
In Chapter 5, the first of the in-school analysis chapters, case study participants are introduced. The tensions, challenges and emotions of the first six weeks of teaching, as revealed through e-journal entries and the first interview, are identified. The contexts in which participants commenced teaching are described and significant markers of transition into the role of teacher are highlighted. Markers of transition or moments of significance are defined in this study as those incidences in which participants verbally identified themselves as a teacher.

Chapter 6 provides a broader analysis across participants’ narratives, through identifying themes, patterns, commonalities and disjunctures. Chapter 6 draws on the responses of participants to the questions posed in the second interview held at the end of Term 2, and on the e-journal entries following the first six weeks to this time. Therefore, Chapter 6 provides a more collective account of the challenges and tensions as well as the successes of the first six months of teaching. Chapter 6 also analyses the data to present evidence of participants’ opportunities to self-author, to determine if participants were able to integrate their own identity into their teaching role and actively pursue the professional goals that they valued.

Chapter 7, the final analysis chapter, provides a reflective comparison of what participants initially believed could be the influences in shaping their professional identity with what became the reality after a year of teaching. Chapter 7 provides an analysis of the final interviews held in Term 4 and those e-journal entries received from the end of Term 2 until the last interview.

The structure implemented for each of the in-school phase chapters (Chapters 5, 6 and 7) draws heavily on the narrative inquiry work of Clandinin (2007) to weave detailed, re-storied narratives of participants throughout the results and analysis. Through presenting aspects of findings as re-told narratives, it was possible to provide immediate and intimate access to the complex experiences of lives in transition. The use of a narrative structure to present the findings throughout these chapters enabled the reflection of the role that language and thought played in the interpretations of interactions and experiences that participants have had with others, including the researcher.
The purpose in structuring the findings and discussions across four chapters was to delve deeper into participants’ thinking to analyse the transition in a way that enabled the researcher to gain insights into not only the experience itself, but the way participants made sense of their experiences. As a consequence, the findings of this study are presented so that understanding the journey of transition for each participant gains momentum and clarity as the findings are progressively revealed, built upon and discussed. Each of the four chapters interrogates further the responses of participants.

The following section of this chapter presents the findings of the in-university stage, Part A, and commences with an analysis and discussion of the focus group findings.

4.2 Stage 1 – Part A: Focus group discussion findings

Capturing Pre-Teaching Perceptions of Professional Identity

This stage of the research was conducted on the campus of the Australian university in which the 20 pre-service teachers had recently completed four years of undergraduate study in either the Design and Technology Education program or the Bachelor of Education, Primary/Middle (3-9) program. The pre-service teachers had majored in Design and Technology education (including Home Economics) and intended to teach Design and Technology in secondary settings. There were six females and 14 male pre-service teachers. They ranged in age from their early 20s to their late 30s. Six of the pre-service teachers had completed a major in Design and Technology Education as part of the Bachelor of Education, Primary/Middle program. The remaining pre-service teachers had completed what equated to a double major in Design and Technology Education as part of the Bachelor of Education Design and Technology Education program. Five participants had studied courses in food and textile technology (Home Economics) with the remaining 15 studying in the areas of advanced technology, electronics and resistant materials, including wood and metal. All 20 participants studied Design as a core teaching methodology.

Participants had not commenced teaching at this stage; however, 12 had received notification of a teaching appointment for the following year. As a consequence, when the group met, there was a general feeling of enthusiasm and optimism as they discussed their plans for the coming year. Those participants who were yet to receive
placements were optimistic that they would do so in the following weeks as a result of statewide teacher shortages in Design and Technology education. The participants were a cohort who had a history of cohesion and group discussion, having studied together throughout the four years of the teaching program. A high level of collegiality and camaraderie enabled conversations to flow freely, with limited input or direction from the researcher. Participants were open to the views of others and responses indicated they felt comfortable in sharing their thoughts and feelings even when they were not of the same view. As a result, the findings reflected multiple perspectives and, at times, contrary responses between participants.

Analysis and discussions in this section of the chapter are structured around the major theme and subthemes that emerged in response to the three questions posed as part of the open-ended, text response questionnaire and the revisiting of that during the focus group discussions. These questions were:

1. What is your perception of your professional identity as a beginning Design and Technology teacher as you leave university?
2. What do you believe are the factors that have shaped your professional identity to this point?
3. What factors do you think will continue to influence this perception once you commence teaching?

The analysis of responses to each of the questions is presented separately. A concluding section provides a summary of responses for each of the three open-ended questions that formed the basis for discussion for the focus groups. What follows is a discussion of the findings for Question 1.

4.2.1 Beginning Design and Technology teachers’ perceptions of professional identity

Gee (2001), Beijaard et al. (2004), Sloan (2006) and Watson (2006) concluded that identity formation is dynamic, that is, identity is ever changing in response to experiences and interaction with others. The implication of such a view is that one should think about identity as an ongoing process of identification: a process of interpreting (and reinterpreting) oneself as a certain kind of person in a given context.
(Gee 2001, p. 99). Findings in this study captured participants’ perceptions of professional identity at particular moments in time, that is, before they commenced in-teaching; however, there was awareness amongst participants that identity formation was a continuous process and that the process for them was in its infancy. Sloan (2006) argued further that within the given context of schools, teachers are both social products and social producers, that is, teachers have an associated socially-produced identity but there is opportunity to shape and transform this perceived identity. The constructions of professional identity that participants held at this stage were yet to be made public, to possibly be critiqued, affirmed or challenged. Participants had not yet had the opportunity to demonstrate or to tell others who they were professionally. As a consequence, there was limited certitude in participants’ perceptions regarding their professional identity. It was not easy for participants to describe their emerging professional identity in words. The most frequent response from participants was that it was how they viewed themselves at this particular point in time, that is, as a beginning teacher about to commence their teaching career. They were, as one participant commented: ‘standing on the edge looking in’ (Brenton, focus group discussion).

Participants were yet to develop the socially produced aspect of their identity that would be shaped through the experiences within the school context. However, Findlay (2006) argued, and this argument is further supported through these research findings, that when beginning teachers commence teaching, they do not enter a context as empty vessels. Their teaching identities have been mediated through past experiences, including their own schooling, the media and university study. This aspect of identity formation is analysed further, under factors that influence the shaping of professional identity, in section 4.3 and again in section 7.2.

The early notions of professional identity, or of seeing oneself as teacher (Kelchtermans 1993), were often expressed in this study through descriptions of particular characteristics that participants believed would contribute to the successful execution of their role as teachers (Goffman 1959; Kelchtermans 1993). For instance, Kim cited her youth and connection with young people as aspects of her professional identity that would enable her to be successful as a teacher:
‘I see myself as a young educator, who is passionate about the learning area. I am motivated to learn as well as teach. I can relate well to students, due to my age (young), my teaching style and my interests, which will be similar to the older students I teach. I am also able to maintain the boundaries between professional relationships and friendships’.

(Kim, written response to questionnaire)

Carol, like Kim, was also confident in her abilities to teach. Her positive image of self was shaped by her understanding of the subject-specific knowledge and the technical skills she believed would be required to be successful as a beginning teacher:

‘I see myself as someone who has in-depth subject knowledge and the skills to be able to impart these into the classroom in a professional manner’.

(Carol, focus group discussion)

For Kim and Carol, identity was defined primarily through how they viewed themselves, and was described through specific characteristics and/or abilities, such as depth of subject knowledge and technical skills. This view concurred with the research of Staples (2003) who argued that many constructions of Design and Technology teachers’ identity focus explicitly on the teachers’ functional roles, that is, the transmission of specific subject know-how (Staples 2003, p. 300). Research (Staples 2003) has indicated that this is particularly evident in the field of Design and Technology education, where many teachers directly associate their professional identity with the curriculum that they deliver.

For five participants, including Damien, perceptions of professional identity were expressed through language that not only reflected self-confidence but indicated a passion and commitment to teaching. Damien’s responses indicated an excitement for teaching, coupled with an anticipated ability to bring about change in the field:

‘I feel that I am part of a new type of D&T [Design and Technology] teacher and this excites me: we are the first graduates to complete this program. I know that I will work differently. I do not have a ‘traditional’ background, my focus is more design, and is conceptually based’.

(Damien, focus group discussion)
The notion of agency is defined by Day et al. as *one’s ability to actively pursue [sic] the goals that one values* (Day et al. 2006, p. 602). The notion of agency is clearly evident as a feature of Damien’s professional identity. He views himself as a change agent with hopes of integrating this aspect of his professional identity into his teaching role. Building on the notion of agency, Evan’s professional identity also embraced the role of advocate for the field of Design and Technology education:

‘I have a strong sense of responsibility to continue to push Design and Technology as a core learning area. Design and Technology is a great subject not only due to its ability to link several learning areas but it has a unique way of engaging students especially those who normally find school work disengaging’.

(Evan, written response to questionnaire)

There is only limited research that has investigated the role of advocacy in shaping beginning teachers’ professional identity, and particularly in the field of Design and Technology. However, Stuart and Thurlow (2000) found that a lack of confidence and vulnerability generally results in beginning teachers being quickly socialised into the status quo. As a result, it could be assumed that ideas of advocacy are quickly diminished once in-service teaching commences. A section which analyses participants’ responses to the issue of beginning Design and Technology teacher advocacy is provided in section 6.1.

The responses of participants thus far revealed beginning teachers who were *idealistic, filled with boundless energy and euphoria* (Steffy & Wolfe 1998, p. 6). These are characteristics that Steffy et al. assigned to the apprentice teacher, that is, one who has successfully completed their school-based professional experiences during which they have been given responsibility for planning and teaching a number of lessons. Thomas and Beauchamp’s (2011, p. 765) study of the metaphors chosen by pre-service teachers at graduation to describe their professional identity also reflected idealism with terms such as: ‘*captain of the boat’*, ‘*the offensive line in a football team*’ and ‘*the coat hanger from which everything hangs*’.

However, for participants in this study, the responses suggested that these positive attributes were juxtaposed with feelings of self-doubt. This was particularly
evidenced when responses were voiced about being in a state of transition from student to teacher. For example, Brenton stated that he had difficulties in defining his professional identity and that he still saw himself as a university student who was on the cusp of change. In the focus group discussion, Brenton further identified that aspects of that change, particularly practical experience in the classroom, would inform and shape his professional identity:

‘I still see myself as a student rather than as a teacher, a bit immature still. I am 80% confident in my ability to teach but need to have more practical experience before I feel completely confident’.

(Brenton, focus group discussion)

Jade viewed the transition into teaching as a need to ‘step up’ to being a professional. Jade stated:

‘Although I find myself ready to teach, I’m finding it hard to believe. I still feel like a student in many ways ... so that step up to being a professional is huge right now! At the moment I am feeling stuck between being a student and a teacher. I think I will be fine once I am in the classroom’.

(Jade, focus group discussion)

Similar feelings were echoed by Isaac who acknowledged his qualification to teach but questioned his competence through a perceived lack of classroom experience:

‘I am qualified to teach but have very little experience. Professional experience is not long enough to run through complete units of work. I realise that learning does not finish at the completion of uni. I know it will be a steep learning curve for me to become the teacher I want to be’.

(Isaac, written response to questionnaire)

The duality of feelings of uncertainty coupled with feelings of confidence, as evidenced in the findings, indicated a negotiation of multiple positions when defining one’s emerging professional identity (Akkerman & Meijer 2011). The multiple positions identified in this study could be recognised in terms of seeing oneself as the student who is still in the process of learning and as the beginning teacher who is feeling confident in their level of subject knowledge. This negotiation of roles and the
levels of uncertainty it generates can be presented as a struggle that is part of the process of identity formation for beginning teachers (Beijaard et al. 2004). For Dianna, the struggle to form a professional identity was also associated with her role as a mother.

‘My identity needs to change from mother and a student to a full-time employed teacher. Being a single mum adds a degree of complexity: the role of being a mother is all consuming and this role is what currently shapes my identity. It is how I see myself’.

(Dianna, written response to questionnaire)

Paetcher and Head argued that female Design and Technology teachers are a minority group, with their research identifying that women are still seen as pioneers in a male world (Paetcher & Head 1996, p. 28). Dianna was one of these pioneers.

The questionnaire and focus group data also revealed an additional level of struggle that was evident when participants were defining their professional identity. It was a struggle that presented itself on two levels. One level was through the expectations of others of the roles that beginning teachers are expected to play and the other level was through the expectations that one had of oneself in these roles. Peter clearly indicated this struggle through the following response:

‘My identity is in the early days of formation, it is emerging. I feel the weight of not only my own expectations but that of my peers at uni to be the type of teacher they think I will be’.

(Peter, focus group discussion)

Peter was not alone in his perceptions, and it is significant to note that 14 of the 20 participants related their written and verbal response to the research question in terms of how they believed others might perceive their identity rather than in terms of how they perceived it themselves. As voiced by Evan:

‘I tend to see myself through the perceptions of others, so I hope they see me as a valuable asset in a school’.

(Evan, focus group discussion)
These data supported Sachs’s (2005) definition that professional identity is how others view the characteristics of others. The ‘others’ in this study were identified as school-based colleagues, peers and students. Participants were mindful of the high level of expectations of others as well as the pressure to provide school students with the knowledge and experiences that they needed to be successful in their studies. The pressure from colleagues was particularly highlighted by the mature-aged participants in this study who were concerned that colleagues, parents and students would make misinformed assumptions regarding their levels of teaching competence. This was evidenced by Nadine and Neil with Nadine suggesting:

‘It is how others in the school perceive me; as a mature-aged person, they will assume that I know everything and have taught for a while ... this puts pressure on me’.

(Nadine, focus group discussion)

And Neil suggested:

‘Being mature-aged I feel that there is a lot expected of me and I feel that I need to be prepared for everything! Pressure!! I hope my trade background will help me become a teacher who is in tune and in contact with industry, teachers and students’.

(Neil, written response to questionnaire)

Britzman (2003) argued that teaching is an emotional process. Data from this study suggested that the transition from pre-service to in-service teacher was also a significant phase of an emotional process. Simone’s response highlighted the highly emotional state that she found herself in as she discussed the uncertainty she felt at this stage of transition, stating that she knew who she was as a person but was still seeking clarity in who she was as a teacher:

‘Uncertainty – I know who I am as a person but still experimenting with me as the teacher. I have thoughts about what sort of teacher I want to be but effectively applying these thoughts into practice isn’t always achievable’.

(Simone, written response to questionnaire)
When questioned further in the focus group discussion, Simone suggested that it would be the ‘type’ of school that she was employed in that would enable her preferred practice to become a reality. Simone’s preferred practice adopted a middle-schooling, integrated approach to teaching and student learning. She acknowledged that not all schools adopted this model and that she may have to change her teaching to ‘match’ what was happening in the school. Christine echoed similar sentiments:

‘I am feeling scared but excited, confident in my content knowledge. I know I can teach content but understanding the school is scary’.

(Christine focus group discussion)

Simone and Christine were the only participants who alluded directly to the school, and more specifically, school cultures and the politics of the school as being a context that could directly impact on shaping their professional identity in the future. When questioned further during focus group discussions, Christine indicated that she wanted to initiate change in the ways in which textiles were currently taught in schools. She expressed concern that the majority of Year 8 students completed the same project regardless of their interests and ability. However, Christine was well aware that: ‘some schools just do it that way’ and that change took time.

As examined in section 2.3.3, socialisation into school cultures and the politics of schools can influence the professional identity of all teachers including those commencing their teaching career (Rust 1994; Reynolds 1996; Coldron & Smith, 1999; Fetherson 2006; Banks 2008). Specific histories, experiences and knowledge can take the form of traditions in schools that not only inform the actions of individuals but can present opposition to those actions (Coldron & Smith 1999). Christine and Simone identified such traditions in their responses, reflecting an awareness of the impact that traditions could have on shaping their professional identities once they commenced teaching.

The diversity of responses in regard to participants’ perceptions of professional identity were intertwined with emotion, change and the predicted outcomes of socialisation into school cultures. What follows is a summary of these diverse findings.
4.2.2 Summary of findings: Participants’ perceptions of professional identity

This phase of the research revealed a range of different perceptions but a greater number of connecting perceptions of professional identity in participants’ responses. For instance, all participants found it difficult to respond directly to the question of: “What is your perception of your professional identity as a beginning Design and Technology teacher as you leave university?” There was unanimous awareness amongst participants that identity formation was a continuous process and that the process for them was in its infancy. Participants could not provide a complete image of self as teacher. As final-year students who were yet to commence teaching, these responses were not surprising.

Perceptions of professional identity or seeing oneself as teacher were primarily expressed through particular characteristics and/or abilities that participants believed would contribute to the successful execution of their role as teachers, that is, the functional roles associated with depth of subject knowledge and technical skill levels specific to teaching Design and Technology education. Data also revealed a strong link between perceptions of professional identity and emotions and feelings, with feelings of optimism regularly juxtaposed to those of self-doubt. Issues of self-doubt were associated with a perceived pressure to conform to or to meet the expectations of others. Others, in this instance, included colleagues in school, line managers such as the head of faculty and students.

At this stage of professional identity formation, identity appeared to be an image of the kind of teacher that participants hoped to be. It was an identity of self as teacher that was yet to be publically critiqued, challenged or confirmed. Participants acknowledged that, once they commenced teaching, this perception of identity could be reconstructed by experiences, social influences and interactions with others. Identity was clearly not viewed as something that was fixed or unchanging.

The following section of this chapter analyses participants’ responses to Question 2 of the open-ended questions posed during the focus group discussions. It identifies the factors that participants believed had shaped their professional identity before they commenced in-service teaching.
4.3 Influences that have shaped professional identity

When pre-service teachers commence their university study, they bring with them varied narratives about who they believe they will become as teachers (Lortie 1975; Knowles 1992; Smith 2003; Groundwater-Smith, Mitchell & Mockler 2007). The narratives of professional identity that pre-service teachers hold have been shaped by a range of social, political and educational constructs that reflect influences of the past, the present and perhaps a vision for the future (Flores & Day 2006). The findings of this study supported this view. When questioned about the influences that had shaped their professional identity, participants identified a range of external factors. These factors included: past life and work experiences; university experiences and, particularly, school-based professional experiences, coupled with the influence of family and friends.

Data revealed that major influences from the past were the work experiences or professional histories that participants brought to the program. Design and Technology teacher education programs attract a high percentage of applicants who have trade or industry backgrounds directly related to the content that they will be teaching. For this study, 11 participants were career switchers (Richardson & Watt 2006): as a result, the profile of pre-service teachers in this program was very different to most undergraduate teaching degrees where a high percentage of the cohort is comprised of school leavers.

As a mechanic, Aaron identified that his previous employment and life experiences had provided him with the ability to manage time and interact with others, and with some of the technical skills he believed he would draw on when he commenced teaching. Neil, a toolmaker, and Peter, a builder, agreed that their work skills had influenced both their decision to commence teaching in their fields and their professional identity. They added that their past trade experiences had provided them with a level of confidence in their teaching abilities. They felt they already had some of the specific technical subject knowledge needed for teaching.

Damien had previously completed part of an industrial design degree and had a professional and personal commitment to environmental sustainability. This enabled
and motivated him to focus on environmental and social justice issues. Damien also viewed his continuing role as a music teacher as enabling him to build successful relationships with students once he commenced teaching. Both of Damien’s parents were teachers and he stated that this: ‘had provided some insights into the world of teaching’ (focus group discussion).

In acknowledging the past influences on professional identity, participants indirectly identified elements of their practice that they viewed as being important in shaping their effectiveness as an educator once they commenced teaching. These elements included: a degree of technical skill related to working with materials and equipment; the ability to develop meaningful professional relationships with both colleagues and students; and, in Damien’s case, an understanding of global issues.

Data from Part A of the in-university phase of the study also suggested that, through their role as parents, several participants believed that they had an insight into students’ life-worlds or funds of knowledge. Funds of knowledge are defined in the literature (Moll, Amanti, Neff & Gonzalez 1992) as the: historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well being (Moll et al. 1992, p. 133). Participants who were parents of teenage children indicated that being aware of teenage interests and knowing the type of behaviour to expect from students of this age could provide them with an advantage in relationship building once they commenced teaching. Peter cited both his age and role as a parent as being instrumental in:

‘Shaping your beliefs about society and how education is shaped by that society. You are hoping that you can set students up for success in life just like you want to do for your own kids. These are the beliefs that inform the sort of person I want to be when I am out there (teaching)’.

(Peter, written response to questionnaire)

Peter’s comments, as with those of several participants, revealed that by reflecting on their own histories and life events, pre-service teachers were able to unearth the influences and beliefs that had, to that time, shaped both their perceptions of professional identity as well as their emerging identity itself.
Kelchtermans (1993) and Coldron and Smith (1999) argued further that these historical and biographical influences will continue to shape participants’ identity once they commence in-service teaching.

All participants indicated that the four school-based, professional experiences that occurred throughout the university program provided the most influential aspect in shaping their professional identity as it provided them with the opportunity to observe the teaching of experienced in-service teachers, to practise and reflect on their own teaching and to seek clarification. This was evidenced by Evan and Simone, with Evan stating:

‘Professional experiences in a range of schools with different year levels, teaching a lesson and being given vital feedback on how effective my teaching was ... this has moulded my approach to teaching students from a range of educational levels’.

(Evan, written response to questionnaire)

And:

‘Professional experiences, viewing other teachers, taking in good practice – making a mental note of what I do not want to reflect in my practice or become’

(Simone, written response to questionnaire)

However, for Travis, professional experience was viewed as a time of professional scrutiny:

‘I always felt the pressure ... of being observed, feeling pressured to do well, not to make mistakes. There appeared not to be the opportunity to try new things and learn from mistakes. So when I am teaching without being observed (in my own class), I think I will feel less pressured ... teaching may not go well but you can take time to find your feet, to know the kids and to learn what will work best’.

(Travis, focus group discussion)

Furlong and Maynard (1995) and Reynolds (1996) argued that professional experience provides the opportunity to affirm and challenge pre-service teachers’ concepts of professional identity.
Data revealed that professional experience appeared to confirm or challenge the concept of professional identity in several ways: firstly, to inform one’s own practice directly, achieved via the feedback from mentor teachers and students and, secondly, through observing the teaching practice of others. Through observing the practice of others, Simone was able to identify the type of teacher she did not want to become. Brenton and Carol also emphasised the strong influence of role modelling provided by mentors stating that mentor teachers:

‘Need to be really good in their teaching’.

(Brenton, focus group discussion)

As well as being,

‘Supportive and able to develop a good relationship that is honest and open to providing feedback, as it is the feedback that helped me to develop as a teacher’.

(Carol, focus group discussion)

The impact of relationship building and, more specifically, the identified need for pre-service teachers to be accepted into existing school cultures was clearly evidenced in Isaac’s response.

‘My third placement was fine but my fourth was not as good as I was not made to feel part of the school, so now there is a slight doubt in my mind about my teaching abilities. It really has impacted on my confidence’.

(Isaac, written response to the questionnaire)

The emotional aspect of beginning to teach should also be highlighted here. While Britzeman (2003) argued that teaching is a deeply emotional process, data from this study revealed that emotion, and particularly negative emotions, were predicted to play a continuing and significant role in shaping the pre-service teachers’ professional identity. For Isaac, the feelings of isolation, not being accepted or valued throughout his final professional experience placement appeared to have had a lasting impact.
The role of the university program itself, including the courses and the tutors, were also cited as being influencing factors on professional identity. This was evidenced by Simone and Carol who stated that:

‘The relevance of the subject content at uni served to promote authority and confidence in oneself’.

(Simone, written response to questionnaire)

And:

‘I have not been in a school for a very long time and it was good to see how the tutors handled situations’.

(Carol, focus group discussion)

Carol looked at her university tutors as role models and actively sought their advice regarding issues related to teaching. Data revealed that the influences that had shaped participants’ perceptions of professional identity before they commenced teaching were diverse. What follows is a summary of this diversity.

4.3.1 Summary of findings: Influences that shaped participants’ professional identity before they commenced teaching

Life and work experiences were identified as providing the knowledge, beliefs and, in some instances, the technical skills that shaped the perceptions of professional identity held by participants. Participants appeared to have developed a cognitive map of what it meant to be a teacher through a range of external influences (Cohen-Scali 2003). Data revealed that an important influence in shaping perceptions was the professional experiences undertaken throughout the university program. These experiences provided the opportunity to affirm and/or challenge pre-service teachers’ concepts of professional identity. The strong influence of mentor role modelling was clearly highlighted from observation of the mentor’s practice through to the provision of constructive, critical feedback on one’s own practice.

Many of the mature-entry Design and Technology pre-service teachers drew heavily on their past work experiences in industry to inform their professional identity. This was not unexpected as Design and Technology education has traditionally been strongly focused on an established body of technical know-how (Williams 2006). The knowledge and skills provided through past experience imbued participants with
confident in the technical aspect of their teaching practice. A number of participants also identified that parents or family friends who were teachers had been influential.

The final section of this chapter analyses participants’ responses to Question 3 of the open-ended questions. It identifies the factors that participants believed would continue to shape their professional identity once they commenced in-service teaching.

4.4 Predicted influences on professional identity

There is limited research that has specifically investigated the predicted influences that pre-service teachers believe will continue to shape their professional identity once they commence teaching. However, the research (see e.g. Reynolds 1996; Coldron & Smith 1999; Sloan 2006) has argued that schools provide specific histories, experiences and knowledge that shape who we are as educators. Reynolds (1996, cited in Beijaard et al. 2000, p. 4) further argued that beginning teachers will need to become familiar with the school and teaching culture as: *These are the workplace landscapes that are related to teachers’ identities by cultural scripts which prescribe what they think and do.* Participants in this study acknowledged the role that schools and, more specifically, the reactions of students toward their teaching and the support of colleagues, would have in continuing to shape their professional identity. As Simon stated:

‘It will be the reaction from the students you teach that will influence how you teach and change how you think you are going. This will impact on how you see yourself as a teacher. You need to be able to enjoy yourself, to have a sense of satisfaction – if you have this, I think you will see yourself as doing OK as a teacher’.

(Simon, written response to questionnaire)

These sentiments were echoed by Carol and Brenton who stated that:

‘How I am perceived by students, the relationships that I develop with students, my relationships with colleagues in the school, will contribute to my own feelings of success or failure’.

(Carol, focus group discussion)
And:

‘Students’ and teachers’ interactions with me; are students responding, are teachers being social?’

(Brenton, focus group discussion)

Participants felt that their professional identity would be shaped by the level of confirmation or acceptance they gained from students and colleagues. If affirmation was forthcoming, it would immediately identify a positive aspect of one’s professional identity, an aspect that, as a consequence, would be reinforced and strengthened.

The data made continued significant reference to developing collegial relationships, being accepted and having opportunities to interact with colleagues in the school. As Isaac stated:

‘It will be the support from school staff, how you are valued in that environment, how much the learning area (Design and Technology) is valued in the school that will influence your identity – I recently had a conversation with a D&T teacher who left the profession after 18 months because where he taught did not value the learning area’.

(Isaac, written response to the questionnaire)

Travis identified more specifically the need for conversations and discussions with Design and Technology colleagues as a means of identifying who you are as a Design and Technology teacher. Travis indicated further that it would be through these conversations that one may have to: ‘[d]efend what you do and, in doing so, this will shape your identity’ (Travis, focus group discussion). Paechter and Head (1996) argued that the perceived status of Design and Technology in many schools is marginal or low status. The responses of Isaac and Travis recognised that this was a reality that they might need to confront and, furthermore, they were prepared to advocate to change this perception.

While all participants acknowledged that their professional identity would be shaped primarily through their experiences with colleagues and students, the data revealed that six participants also identified a number of environmental and physical factors
that could impact on their professional identity. Travis, Aaron and Isaac perceived that the school budget allocated to the teaching of Design and Technology would have a major impact on what they could teach. Travis observed that, throughout previous professional experience placements, restrictive budgets had been developed and this, he argued: ‘really limits the amount and type of material you could use as well as the type of project you could make’ (Travis, focus group discussion).

Isaac and Aaron elaborated further:

‘I think funding of the tech area does limit what is available, and this will determine what you can teach and how you can teach it’.

(Isaac, written response to questionnaire)

And:

‘It will be budget allocations combined with available resources and equipment that will determine what I teach, but I know I will have to work with what the school has to begin with’.

(Aaron, written response to questionnaire)

While acknowledging the limitations that school resources and budgets could place on what participants could initially teach, there was a degree of optimism in Aaron’s response in that any limitations or barriers were viewed as short-term and open to change.

4.4.1 Summary of findings: Predicted influences on professional identity

Data revealed that the factors that participants believed would influence their professional identity once they commenced teaching were primarily centred on formal and informal feedback and the responses that they received from colleagues and students. These predicted responses would be focused on participants’ teaching roles, both the content that they delivered and the pedagogies that they adopted. It appeared that responses from colleagues and students were expected to provide an influence that could serve to confirm, inform or reshape participants’ identities. For instance, participants acknowledged that positive comments made by colleagues would indicate acceptance or approval in regard to an aspect of their teaching. As a consequence, this aspect of their teaching would or would not become part of their
practice and, ultimately, part of their professional identity. Identity, in this instance, was clearly linked to the teaching roles that they would assume. These views concurred with Coldron and Smith (1999) who stated that schools (colleagues) and classrooms (students) play an important role in:

... reframing prior conceptions of self as teacher and in re-defining new teachers’ professional identity by making choices and decisions that actively locate them in a particular context.

(Coldron & Smith 1999, p. 714)

Participants in this study believed that the professional choices and decisions that they made as beginning teachers would be strongly influenced by the responses of others.

The data highlighted the significant role that the development of positive relationships with colleagues and students was predicted to have in shaping their professional identity. While mentoring was not specifically identified as an aspect of relationship development, participants stated that having the opportunity to converse and engage in discussions with colleagues would enable them to identify who they were as Design and Technology teachers. The need for clarification, affirmation and acceptance in their role appeared to be of paramount importance as a predicted influence in shaping participants’ professional identity.

4.5 Final discussion for Part A of the university stage

The analysis of the data from Part A, the in-university stage, of this study indicated that identity was not viewed by participants as being something that was fixed. Identity was perceived to be dynamic and ever changing. The most significant influences that participants perceived would contribute to this change were associated with school-based experiences and interactions with others, that is, the context in which they would commence in-service teaching. Participants’ responses acknowledged that the context would facilitate an ongoing process of identification that Gee described as a process of interpreting (and reinterpreting) oneself as a certain kind of person (Gee 2001, p. 99). The data revealed that the development of relationships with colleagues and students or the lack thereof would become the basis for that interpretation and reinterpretation of how they viewed themselves as teachers.
Drawing on Gee’s (2001) perspectives of identity construction, participants in this phase of the study correlated their perceptions of identity through the perspectives of discourse and affinity. That is, participants identified that it would be the dialogue and responses of others coupled with an acceptance of their teaching practice that would serve to affirm their professional identity.

Drawing on the work of Foucault (1990) to further analyse the responses, identity at this stage of transition was viewed by participants as being a process of:

> Consciously or unconsciously constructs[ing] one’s self into who one wants to be through past and current experiences, social influences and interactions coupled with an understanding of one’s self through reflection.

(Foucault 1990, p. 26)

Past and current experiences had strongly influenced participants’ perceptions of their identity up to the focus group stage. Life and work experiences were identified as providing the knowledge, beliefs and, in some instances, the technical skills that shaped the perceptions of professional identity held by participants. Perceptions of professional identity or seeing oneself as a teacher were primarily expressed through particular characteristics and/or abilities that participants believed would contribute to the successful execution of their role as teachers.

The data revealed that some of the major influences in shaping their professional identity were the school-based professional experiences throughout their university study. These experiences provided participants with the opportunity to observe the teaching of experienced in-service teachers and to practise and reflect on their own pre-service teaching. At this stage of professional identity formation, identity appeared to be an image of the kind of teacher participants hoped to be. It was an identity of self as teacher that participants held in their heads and hearts and was yet to be publicly critiqued, challenged or confirmed. These initial perceptions and beliefs are revisited in Chapter 7 when a reflective comparison affords an insight into what became the reality in shaping professional identity after a year of teaching.
The following section of this chapter, Part B, presents an analysis of participants’ verbal (the focus group discussions) and written responses to the teacher professional knowledge framework. A concluding discussion provides a summary of responses for each of the aspects identified through the framework.

4.6 In-university Stage – Part B

Identifying Design and Technology Professional Knowledge – Analysis through a Teacher Professional Knowledge Framework

This section of the chapter, Part B, analyses the written and verbal responses of the 20 participants examining the role of, and interaction between, professional knowledge and professional identity. In this section of the chapter, it is argued that the boundary between professional knowledge and identity is not clear: one appears to be part of the other with neither being viewed as being fixed but as ever evolving and transforming as a result of past, present and future interactions and experiences.

As stated in Chapter 3, an adapted version of the CReTE framework for conceptualising teacher professional knowledge (see Banks & Barlex 1999; Banks, Leach & Moon 1999) provided the data collection method for this phase of the study. While the original framework provided the opportunity for collecting data related to professional and pedagogical knowledge, it required modifying to enable it to facilitate the collection of data that related to the influences on the development of that knowledge or how those influences could serve to enable one to self-author or be the teacher that participants wanted to be. As a result, the original framework was amended (Figure 4.1) to address the identified focus of this study through replacing the original school subject knowledge aspect with a question that sought to investigate the influences within the school context that could serve to enable participants to self-author or to be the teacher that they wanted to be.

The CReTE framework also identified personal constructs as a combination of elements including subject, pedagogic and school knowledge. For this study, personal constructs were amended to capture how participants viewed themselves as beginning teachers.
Drawing on this adapted framework (Figure 4.1), participants were asked to document the following:

- the subject knowledge that they believed facilitated professional identification as a Design and Technology teacher
- the pedagogical knowledge that they believed they would need to develop to enable them to become an effective Design and Technology teacher
- the influences in a school that they believed could impact on enabling them to self-author, that is, to be the teacher that they wanted to be
- the personal constructs of their professional identity as a Design and Technology educator, that is, how they saw themselves professionally as beginning teachers.

The subsequent discussion presents the findings under the headings of subject knowledge, pedagogical knowledge, predicted influences on the ability to self-author and finally, how participants perceived themselves as beginning teachers. The section that follows commences with an analysis and discussion of the subject knowledge.
that participants believed facilitated professional identification as a Design and Technology teacher.

4.6.1 Subject content knowledge

Mayer (1999), Beijaard et al. (2000), Watson (2006) and Smith (2007) argued that the importance of the concept of professional identity lies in its relationship to professional knowledge and action: the findings of the research reported here would suggest strongly that this is the case for beginning Design and Technology teachers.

For example, Kim wrote:

‘All elements of subject knowledge assist us in being professionals, and therefore facilitate us in recognising our professional identity. A solid understanding of curriculum and subject content is necessary for us to do what we do and do it well’.

(Kim, written response to teaching framework)

Carol wrote more specifically as she identified the specific subject knowledge she would need to teach effectively:

‘I will need to have the knowledge and understand the aspects of working with food, textiles and child studies’.

(Carol, written response to teaching framework)

When identifying the subject knowledge associated with teaching Design and Technology education, all participants in this study stated that ever-increasing changes in technology made specific identification of this knowledge complex and dynamic. For example, Simon, who studied a Design and Technology major and Maths minor, stated that:

‘I think one of the things that defines us (as Design and Technology teachers) is the range of topics that are now classed under the Design and Technology banner. I am not clear what other subjects have to do in regards to curriculum but we have to learn new things every day to keep up with our subject. I know Maths changes but it is essentially the same mathematical processes. We have got to understand things like advanced manufacturing, electronics and new
ICT technologies. What we have to teach is continuing to get bigger and bigger and more complex’.

(Simon, focus group discussion)

James elaborated further:

‘What we teach includes developing an understanding of technology: we are still required to teach design and technical skills but we need to bring relevant and authentic curriculum and learning into the school environment. What we teach and how we teach it continues to change’.

(James, focus group discussion)

Simone acknowledged the diversity of subject content knowledge; however, she also indicated that, as a beginning teacher, she would need to continually expand on her subject knowledge once she commenced teaching. As Simone elaborated:

‘Educators are not expected to be an expert in all areas of their subject, nor is it realistic to expect they specialise in knowing each and every piece of equipment or material. However, a professional teacher does need to strive to understand the curriculum and continuously expand on their content/subject knowledge. I know I will need to keep learning once I start teaching and there will always be new things to learn’.

(Simone, written response to teaching framework)

These views concurred with Barlow (2002) who argued that beginning Design and Technology teachers are being confronted by a situation where they are required to possess a significantly different and more expansive knowledge then was the case for graduates in the past. MacGregor (2002), Middleton (2006) and Williams (2006) concluded that, at a curriculum level, Design and Technology education has changed dramatically over the last 10–20 years, starting with a transition from vocational to general education through a series of curriculum reforms. As identified in the review of the literature, these curriculum changes have led to a paradigm change (Pavlova & Smith 2003). That is, there has been a change in the discourse (Kamler & Thomson 2006) that defines and produces what teachers know and teach, as well as how one describes the field of Design and Technology education. The responses of participants in this study reflected the impact that curriculum and subject content
change can have on shaping professional identity. Participants did not view their identities as being stable but as shifting in response to these curriculum changes.

Interestingly, Carol suggested during the focus group discussion that the students she taught would bring new knowledge to the learning area and as a teacher she would need to be confident enough to say: ‘I don’t know that but I will find out more and we can work on this together’. For Carol, there appeared to be a level of confidence in this regard as she acknowledged that what she will teach may change constantly as a result of new subject knowledge that may be student-initiated. The role of teachers and students working together as co-learners could provide a new dimension to perceptions of professional identity in the future.

It was interesting to note that several participants viewed the dynamic nature of Design and Technology subject knowledge as a positive aspect. For example, in the focus group, Neil stated that: ‘[h]aving the latest learning and knowledge of newer technologies would provide a little bit of political pull’. In his response, Neil elaborated further that this new knowledge could provide an opportunity to teach in subjects that he wanted to teach in and to teach these subjects in new ways. Neil identified the use of digital technologies as one such area that he had been introduced to during his university study.

According to Lamote and Engels (2010), teachers like Neil have the potential to contribute actively to whole school development and change, as they seek new challenges for themselves and students. Lamote and Engels (2010) applied the term extended professional to the teacher who associates creativity, innovation and collaboration as integral aspects of their professional knowledge. In Design and Technology education, the extended professional could be identified as the teacher who moves beyond teaching familiar subject content knowledge and technical skill development and seeks new and socially relevant directions for the learning area.

However, there is the potential for conflict in the shaping of professional identity in this situation. If, as Staples (2003) argued, Design and Technology teachers derive their identity from the content that they teach, then changes to that content could prove to be unsettling.
Conflict could arise when participants of this study commenced teaching and were confronted with situations that challenged the relevance of their professional knowledge. This is addressed further in Chapters 6 and 7.

Participants identified specific subject content knowledge associated with teaching the more traditional subjects, for instance, wood, metal and textiles. In so doing, they acknowledged the need to: ‘understand the fundamental properties of materials and processes’ (Simon, teacher framework written response); the need to be multi-skilled and to work with a range of tools and equipment; and, more specifically, to ‘be competent in working with your hands’ (Jason, teacher framework written response). These responses concurred with Williams (2006) who argued that Design and Technology education has traditionally been strongly focused on an established body of learning which involves learning specific skills through doing. Staples (2003) also argued that many constructions of professional identity for Design and Technology teachers focus explicitly on the teachers’ functional roles, that is, the transmission of specific subject content know-how.

As evidenced in Part A of this chapter, a large number of participants in this study had commenced university study with an already developed understanding and established set of skills that could be directly applied to the subject knowledge associated with teaching in their fields. These skills and capabilities had been developed through diverse occupations and interests and included toolmaking, boat building, dressmaking, fashion design, furniture manufacturing and prosthetics making. These skills were identified as aspects of the subject knowledge that participants believed they would need in order to teach. For example, Neil commenced the Design and Technology program after completing an apprenticeship as a toolmaker. He had been employed in this capacity for several years before deciding to commence a teaching degree. Neil stated that:

‘Having worked in a business for several years, I have developed a very strong work ethic and I intend to draw on that and on the social, business and industry skills that I have developed from my previous experiences to inform my own practice’.

(Neil, focus group discussion)
The research findings also suggested that participants believed that having these skills would provide them with a degree of confidence and competence as they transitioned into the teaching role. This aspect was distinct from teachers of other disciplines who, as undergraduate university students, might need to develop a greater level of specific subject knowledge once they commenced their teaching degree. For a large percentage of participants in this study, the subject knowledge they brought to the undergraduate degree was to varying degrees already developed.

Associated with the teaching of technical skills, safety and safe work practices were also identified as key aspects of Design and Technology subject knowledge. For example, Travis stated that: ‘[a]s D&T teachers, we need to have a major understanding and focus on student safety’. The strong emphasis that participants placed on technical skill development and workplace safety as aspects of subject knowledge is unique to Design and Technology education. While previous studies of Science and Chemistry teachers (see e.g. Beijaard et al. 2000; Smith 2007) identified topic-specific subject knowledge that is theory- and concept-based (e.g. understanding scientific concepts), fewer studies (see e.g. Banks et al. 2004; Williams 2006; Banks 2008) have identified the significance of the procedural or practical aspects of subject knowledge that are central to teaching Design and Technology. Findings from this study highlighted the centrality of this aspect of subject knowledge for this learning area.

The majority of participants in the study identified that the possession of knowledge about design and design processes was an important aspect of their subject knowledge. This finding is significant to the field as it represents a shift in thinking about subject knowledge that moves beyond the transmission of subject-specific know-how as identified by Staples (2003) to a more holistic and student-centred approach to knowledge construction. For example, Peter stated:

‘We need to understand and promote design thinking: this will give us (as teachers) the ability to cover the curriculum content in meaningful ways, so we can guide students to think and not just do’.

(Peter, written response to teacher framework)
The processes of critiquing, designing and making as identified in the South Australian Standards and Accountability Framework (SACSA 2001) were identified by participants as the stages in a design process. However, an understanding of the South Australian curriculum for Design and Technology was specifically identified by only four participants as being instrumental in informing the subject knowledge that would facilitate professional identification as a Design and Technology teacher. This may have been because participants believed that SACSA had played a major role in shaping their subject knowledge throughout their university study and would continue to do so once they commenced teaching. Perhaps understanding the curriculum was an assumed ongoing influence in shaping professional knowledge and, for that reason, direct reference to it was limited. This view concurred with Smith who argued that:

*Newer entrants to teaching become teachers within the new discourse and are likely to take for granted many of the practices and structures, such as curriculum.*

(Smith 2007, p. 380)

While Smith’s observations related specifically to beginning teachers, similarities can be drawn to the introduction of curriculum policies and the reinforcement of those policies during the professional experiences that participants in this study had experienced.

A direct association between professional and personal identity and subject knowledge was evident in several participants’ responses. For instance, Isaac stated that:

‘The Design and Technology learning area is quite vast so being an expert across all areas is virtually impossible. To be relatively competent across all areas that you teach is important. Materials technology, understanding CAD, electronics and design are all important to me. I think realistically the learning area needs to be somewhat a reflection of who you are as a person so that you are naturally interested in gaining knowledge and skills’.

(Isaac, written response to teacher framework)
James stated that as Design and Technology educators:

‘We really need to be good communicators to be able to successfully transfer the skills and knowledge that are developed through the curriculum. We need to be not only good at doing but we need to be able to talk and to integrate in this subject as you don’t rely on a textbook’.

(James, focus group discussion)

Brenton also identified that you can expand on the subject knowledge of Design and Technology by integrating the learning across other subject areas. Brenton proposed:

‘A move away from traditional methods, you can bring in Art and Design but you can also incorporate other learning areas like Maths and Science, this way students can see the relevance. You can apply all that stuff to Design and Technology’.

(Brenton, focus group discussion)

Both James and Brenton reflected a strong holistic view in their responses. There is further discussion in section 6.2 about whether this holistic approach is feasible or whether it becomes an ambitious approach that could not become a reality once in-service teaching commenced.

4.6.2 Summary of findings: Subject content knowledge

Beijaard et al. (2000) concluded that teachers derive their professional identity from both the subject matter they teach and their pedagogy. Staples (2003) further argued that this is particularly evident in the field of Design and Technology education, where many teachers directly associate their professional identity with the curriculum that they deliver. Participants in the research were yet to commence teaching at this stage of the study; however, the study’s findings concurred with and strengthened this view. Participants identified technical skills and procedural knowledge as aspects that facilitated professional identification as a Design and Technology teacher. Furthermore, participants whose past histories had enabled the development of these skills believed that this had provided them with an additional level of confidence and competence in developing their subject knowledge as they transitioned into the teaching role.
Participants in this study also acknowledged that what they would teach was changing as a result of new technologies. Furthermore, these changes made professional identification through subject knowledge complex and dynamic. However, changes to subject knowledge were seen by participants as being an opportunity to open up the learning area to that new subject knowledge as well as new pedagogic approaches. While the data revealed that subject knowledge continued to be strongly connected to the teaching of technical skills, safety and safe work practices and the need to understand the fundamental properties of materials and processes, acknowledgement was also given to subject knowledge incorporating the concept of design and design processes. So, while the data revealed that the majority of participants continued to view Design and Technology as a doing, hands-on subject, a significant number also identified the need for Design and Technology to be viewed as a thinking subject that generally embraced the critiquing, designing and making of artefacts.

Staples (2003), Banks et al. (2004), Watson (2006) and Banks (2008) argued that when examining the relationship between professional knowledge, that is, subject knowledge and pedagogical practice, and the development of professional identity, the connections are complex and often historically located. In many responses, it was difficult for participants in this study to make a clear distinction between professional knowledge and professional identity. It appeared that the content that they taught and the pedagogies that they ultimately adopted would shape their professional identity and how they viewed themselves as effective educators. Table 4.1 depicts more specifically some examples of the aspects of subject and pedagogical knowledge that participants identified as being relevant to becoming effective Design and Technology educators.
Table 4.1: Aspects of Design and Technology subject and pedagogical knowledge as identified by participants

<table>
<thead>
<tr>
<th>Professional Knowledge – Subject Content Knowledge</th>
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<tbody>
<tr>
<td>‘We need to understand the fundamental properties of materials and processes’. Simon</td>
</tr>
<tr>
<td>‘Materials technology, understanding CAD, electronics and design are all important to me’. Isaac</td>
</tr>
<tr>
<td>‘As Design and Technology teachers, we need to have a major understanding and focus on workshop and student safety’. Travis</td>
</tr>
<tr>
<td>‘You need to teach technical skills using a range of tools and equipment and as teachers you need to be competent in working with your hands’. Jason</td>
</tr>
<tr>
<td>‘We have got to understand and use digital technologies, things like advanced manufacturing, electronics and new ICT technologies’. Simon</td>
</tr>
<tr>
<td>‘We need to understand the curriculum (SACSA)’. Isaac</td>
</tr>
<tr>
<td>‘We need to be able to teach design skills – using CAD, we need to encourage students to communicate their design ideas in a variety of ways. We also need to understand and promote design thinking’. Peter</td>
</tr>
<tr>
<td>‘What we teach needs to include developing an understanding of technology’. James</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professional Knowledge – Pedagogical Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘We really need to be good communicators’. James</td>
</tr>
<tr>
<td>‘The ability to cover the curriculum content in meaningful ways, so we can guide students to think and not just do’. Peter</td>
</tr>
<tr>
<td>‘I think it is important to develop projects that meet the majority of skill levels. You can’t just do the pencil (box) thing; you need to find projects that can support some students and extend others. You can’t be one-dimensional in your approach’. Travis</td>
</tr>
<tr>
<td>‘We need to bring relevant and authentic curriculum and learning into the school environment’. James</td>
</tr>
<tr>
<td>‘Engaging all students, presenting theory and practical lessons that are interesting, relevant and challenging’. Simone</td>
</tr>
<tr>
<td>‘We need to be not only good at doing but we need to be able to talk and to integrate in this subject as you don’t rely on a textbook’. James</td>
</tr>
<tr>
<td>‘There is a need to balance student-centred pedagogy with safe work practices in workshop settings without resorting to lock-step processes’. Isaac</td>
</tr>
<tr>
<td>‘You can bring in Art and Design but you can also incorporate other learning areas like Maths and Science; this way, students can see the relevance. You can apply all that stuff to Design and Technology’. Brenton</td>
</tr>
<tr>
<td>‘The pedagogical knowledge that I will need to become an effective Design and Technology educator is the ability to develop relationships with my students so that I can produce and negotiate tasks that will motivate and benefit them’. Aaron</td>
</tr>
</tbody>
</table>

The subsequent section elaborates more broadly on the aspects of pedagogical knowledge documented in Table 4.1. What follows is an analysis of participants’
written responses to the question: ‘What pedagogical knowledge do you believe you will need to be an effective Design and Technology educator?’

4.7 Pedagogical knowledge

Learning in Design and Technology education has traditionally been strongly focused on an established body of technical know-how or learning specific skills through doing (Williams 2006). The pedagogical approach was one of master and apprentice where students would observe step by step and copy the teacher. However, Beijaard et al. (2000, p. 753) argued that teaching cannot be reduced to a technical or instrumental action. Beijaard et al. (2000) further postulated that traditional teacher-centred conceptions of teaching are being replaced with a more student-centred approach. Participants in this study reflected this view as their responses suggested that teaching involved ethical and moral aspects such as: knowing and understanding the ways in which students learn; formulating subject content so that it can be understood by students; as well as developing effective communication strategies. While participants’ responses were diverse, they centred very much on students and meeting their learning needs. The pedagogical approach was also regarded as being generic to teaching and not specialisation-specific. This was evidenced by Kim:

‘Pedagogy is unique to each and every teacher as a result of personal beliefs and ideologies as well as experience and knowledge within a subject and curriculum’.

(Kim, written response teacher framework)

The need to know students, to teach content that was age- and ability-appropriate, as well as having an ability to plan lessons that engaged and motivated students, were identified by participants as key aspects of pedagogy that would facilitate effective teaching. This was evidenced in the responses of Carol and Simone:

‘… planning a variety of lessons and assessment tasks to enable students with different skill-sets to be successful. This could include oral presentations, using ICTs, as well as written assignments’.

(Carol, focus group discussion)
And:

‘Engaging all students, presenting theory and practical lessons that are interesting, relevant and challenging’

(Simone, written response teacher framework)

An understanding of Design as a core methodology for teaching Design and Technology manifested itself through participants’ interest in using different and innovative pedagogical approaches that moved away from a master and apprentice model to one that was student-driven, catered for student diversity and was open-ended in its outcome. Three participants, including Evan and Travis, identified issues of inclusivity as well as the need to cater for a range of learning abilities when teaching:

‘You need to know the level of student ability in your class and be able to construct design tasks to cater for a range of students. This could mean, for example, having a large construction project like a model of an energy-efficient house. You then break down the task which could push the most gifted students but support the student who is still developing basic D&T skills’.

(Evan, written response teacher framework)

Travis’s response echoed these sentiments:

‘I think it is important to develop projects that meet the majority of skill levels. You can’t just do the pencil (box) thing; you need to find projects that can support some students and extend others. You can’t be one-dimensional in your approach’.

(Travis, focus group discussion)

An aspect of pedagogy that was rated highly by participants was the ability to develop relationships with students. The development of positive professional relationships was identified as a means to ensure relevance to the content of what was being taught. Six participants, including Aaron, suggested that:

‘The pedagogical knowledge that I will need to become an effective Design and Technology educator is the ability to develop relationships with my
students so that I can produce and negotiate tasks that will motivate and benefit them.

(Aaron written response teacher framework)

While three participants identified instilling safe work practices as an aspect of their pedagogy, reference to how this would be achieved did not appear to be prescriptive. As evidenced by Isaac:

‘There is a need to balance student-centred pedagogy with safe work practices in workshop settings without resorting to lock-step processes’.

(Isaac, written response teacher framework)

4.7.1 Summary of findings: Pedagogical knowledge

The findings revealed that participants’ perceptions of their pedagogy were student-centred with an emphasis on developing positive professional relationships and designing tasks that were relevant and met the learning needs of a diverse range of student abilities. These findings were surprising to the researcher who had made assumptions that participants’ responses would reveal pedagogical knowledge that could be identified as being Design and Technology education-specific. The reason for this view was that the research had found that pedagogical practice in Design and Technology education had, in the past, centred specifically on what the teacher was teaching (Zuga & Bjorkquist 1989; Paechter & Head 1996) and not on what and how the students were learning.

Curriculum over the last 10 years has seen a move away from specific skilling or the transmission of subject specific know-how (Staples 2003, p. 300); however, change in educational practice is gradual. As highlighted in section 2.4.3 the adoption of new curriculum in Design and Technology education is gradual and uneven; at best, it is fragmented and, at worst, it is totally ignored (Pavlova & Smith 2003).

In section 4.4, it was reported that participants had identified the school-based mentor as being one of the major influences on shaping their professional identity to date. If this was the case, it could also be assumed that elements of the pedagogy that pre-service teachers had observed throughout their professional experiences may have continued to reflect a transmissive approach. As a consequence, the researcher had
made assumptions that participants would have identified aspects of this observed pedagogy in their constructs of pedagogical knowledge: in so doing, pedagogical practice that was focused on Design and Technology or on their specialisation would have been evident. What the findings revealed was a more holistic view of pedagogical knowledge.

The following section of this analysis and discussion chapter examines the perceived influences within a school that participants believed could impact on enabling them to self-author and to be the teacher that they wanted to be.

4.8 Predicted school influences

The data revealed there was a high degree of similarity in these responses to those offered to the open-ended question of ‘predicted influences on professional identity’ posed in Part A of this chapter; however, there were also differences. For this reason, the two questions were analysed separately to gain a deeper and richer insight into participants’ responses. In Part A, participants’ responses centred primarily on the belief that formal and informal feedback and the responses received from colleagues and students would influence their professional identity. The data also highlighted the significant role that the development of positive relationships with colleagues and students was predicted to have in shaping their professional identity. However, when asked to specifically document the school influences that would enable participants to self-author, the hierarchical nature of these relationships became more apparent.

It appeared that all participants acknowledged that the previously established expectations and procedures within the school coupled with internal school politics could potentially be governing factors in enabling them to teach what they wanted to teach and in the ways that they wanted to teach. For instance, Simone suggested that the ability to teach in the way that she wanted to would:

‘… depend on whether you are the main (Head) Design and Technology teacher. If I were to teach in a small faculty with only one or two teachers, I would have more influence over what and how I taught. Your chance to contribute to the shaping of what is taught will definitely be increased in a small faculty’.

(Simone, written response teacher framework)
The term *self-author* (Sloan 2006; Soreide 2006) could be applied here in response to the ways in which beginning teachers position themselves in relation to others, including teaching colleagues and school management. More specifically, self-authoring is about voice (Soreide 2006). That is, it is about participants having a voice in determining how they are identified by others through what they teach (subject knowledge) and how they teach (pedagogical knowledge). Similarly, Evan identified the leadership of a school as being of major significance in facilitating the ability to self-author:

‘I believe leadership will have the strongest influence on my ability to teach in a way that I feel comfortable and confident. If the leadership is behind the exploration of teaching students D&T in a way which enables greater diversity and integration throughout the curriculum strands, then the foundation will already be set for me as a new teacher to have the support I need from my colleagues to teach with confidence’.

(Evan, written response to teacher framework)

While Sloan (2006) and Soreide (2006) promulgated the view that the construction of an individual sense of self is achieved through personal choices in regards to whom and what one associates with at a given time, it appears that participants in this study were clearly aware that accommodating personal choice would be, to some extent, as beginning teachers, pre-determined by the schooling context. Participants such as Evan and Peter identified staff in leadership positions, such as heads of faculty or learning area coordinators, as having a strong influence over shaping what would be taught in Design and Technology.

‘I have worked (during professional experience) in schools where it was a very academic focus and D&T was a very poor cousin with very low budgets: this really has a massive influence on what you can do. If you can go to leadership and say ‘Hey, I have this great idea’, it really helps if they are D&T-focused. If they are not, you are going to bang your head against the wall and this is going to really dishearten you as a teacher’.

(Peter, written response to teacher framework)
Isaac and Christina acknowledged the hierarchical nature and the predicted influence of internal school politics and appeared to be resolved to the fact that the opportunity to self-author would need to wait until they had acquired more teaching experience in their school:

‘I will probably just teach what the school tells me to for the first six months which will probably mean that I will use some units of work that could do with some improvements but it also gives me an opportunity to get myself organised as a teacher without extra programming and planning’.

(Isaac, written response to teacher framework)

And:

‘Schools will often shape what you have to teach. I really want to teach textiles but not all schools will have a focus on this area of the curriculum. I am really hoping that I can present new ideas that I can teach but that may not be immediately’.

(Christina, focus group discussion)

The issue of set projects, that is, projects that staff in the Design and Technology faculty had previously made, perhaps on numerous occasions, presented a predicted dilemma for Christina and James who were concerned that such projects and existing subject content could limit the flexibility of the teaching environment. As a result, they believed that opportunities to contribute to the planning of projects that students would design and make could initially be limited. James stated further:

‘What really worries me is that I may not be able to teach in the way that I would like to as the prac experiences I have engaged in have been a bit of a let-down. I was often told this is what the students will be doing. I had no ownership over planning or my teaching. This caused me to question myself and my beliefs about being an educator. I worry that this may be the case once I start teaching’.

(James, focus group discussion)

The opportunity for participants to become active agents in shaping their identity and to produce self-authored actions (Sloan 2006) was the identified concern here. Through not being permitted to make personal choices in what they taught and how they taught, it was clear that participants were concerned that they might not have the
opportunity to develop aspects of the individual uniqueness that they could bring to teaching. Furthermore, they were concerned that what they did bring to teaching would not be not valued or allowed to develop further.

As argued by Coldron and Smith, every aspect of teachers’ work:

... has a personal dimension, imbued with feelings and understandings that create patterns of personal meaning to enable one to find their voice and create their own sense of professional identity.

(Coldron & Smith 1999, p. 719)

What this means for participants in this study is that the patterns of personal meaning and the ability to find their voice could be subdued and, as a consequence, the ability to create their own sense of professional identity could be limited. This was evidenced by Kim who stated that:

‘Influences within a school which may deter or slow the process of becoming the teacher I want to be include issues such as limited or unsatisfactory facilities and resources, and colleagues and staff at the school with negative attitudes towards me. It will also depend on the school and community members understanding of the value of education, particularly within the subject area of Design and Technology’.

(Kim, written response teacher framework)

While leadership and valuing the place of Design and Technology in schools were identified by participants as significant factors in facilitating the ability to self-author, several participants viewed this ability in more pragmatic terms. Issues such as budget constraints, timetabling and availability of resources and facilities were identified as enabling or restricting participants’ abilities to teach in the ways that they wanted to. While these issues were also identified in Part A of this chapter, they were linked more specifically here to what participants could or could not teach and the impact that this would have on their teaching role and, ultimately, on their professional identity.
4.8.1 Summary of findings: Predicted school influences

The findings revealed both a degree of similarity to those documented earlier in this chapter and also facilitated a deeper level of analysis. For instance, while the development of professional relationships with colleagues and students was initially identified as being pivotal in shaping participants professional identity once they commenced teaching, the hierarchical nature of these relationships was highlighted as being central to enabling participants to be the teacher that they wanted to be. Participants recognised that their ability to self-author may initially be limited by those in leadership positions; however, there was a strong sense of optimism that participants would ultimately have a voice in determining what and how they taught. Participants realised, however, that existing school cultures and expectations could mean that becoming the teacher that they want to be may take some time.

As was examined in section 2.3, Vonk (1993) has argued that as beginning teachers engage in the process of creating their professional identities, they develop a sustainable identity. This identity is adopted in order to deal with the complexities and, in the case of this study, the possible tensions inherent in assuming the roles and responsibilities of the first year of teaching. However, Vonk (1993) concluded that this identity is temporary and will change as beginning teachers obtain personal and professional acceptance from students, teaching colleagues and school management. This transitionary stage of professional identity creation appears to be part of a process predicted by participants in this study as they acknowledged that they will: acquire and then redefine a professional identity that is socially legitimated. (Coldron & Smith 1999, p. 712)

4.9 Personal constructs of professional identity

In the original Banks and Barlex (1999) framework for conceptualising teacher professional knowledge, personal constructs are described as:

A complex amalgam of past knowledge, experiences of learning, a personal view of what constitutes good teaching and a belief in the purposes of the subject.

(Banks & Barlex 1999, p. 7)
While the framework provided what could be described as a summative view of personal constructs, this study was seeking a more formative view. That is, the study sought to reveal, more specifically, how participants viewed themselves at a particular point in time, that is, as they were about to commence teaching. However, it was recognised that past knowledge, experiences of learning and personal beliefs about the purposes of teaching Design and Technology could inform these views.

The majority of responses were imbued with emotion, with participants identifying feelings of nervousness, excitement and apprehension as they were about to commence teaching. For example, Peter, Isaac and Travis stated:

‘I am currently nervous and worried about planning, apprehensive about the year levels I may be teaching’.

(Peter, focus group discussion)

‘I have reservations and still question myself about my readiness to teach: I realise there will be challenges’.

(Isaac, focus group discussion)

‘Nervous and excited but I feel ready to move on from my university education’.

(Travis, focus group discussion)

These responses were not unexpected: as was suggested in the review of the literature, teaching is a deeply emotional process (Britzman 2003, p. 22). Juxtaposed to the feelings of anxiousness and self-doubt were feelings of confidence and a commitment to teaching.

For example, Kim and Aaron stated:

‘As I believe most beginning teachers would also experience, I have mixed feelings about embarking on the adventure of teaching as well as developing my professional identity. I know how I want my professional identity to be perceived, but I am aware there could be a difference in how I am actually perceived. I am enthusiastic about teaching and learning, confident in curriculum and content knowledge and I believe I am an approachable teacher
for students. I also believe my initial nerves will disappear after a while and my confidence will grow. Conversely, there will be times when experiences and people will cause my confidence to falter and rattle my nerves which I believe to be only natural’.

(Kim, written response teacher framework)

And:

‘I see myself as nervous, excited and quietly confident. My age means that I have other experiences I can bring to my teaching and also my uni results tell me that I am as well prepared and as knowledgeable as I can be as I leave uni. I am extremely keen to extend myself and learn as much as I can from both peers and my own experiences’.

(Aaron, focus group discussion)

Fetherston (1993, 2006) argued that in the first year of teaching, beginning teachers not only learn about themselves, but they learn about themselves as teachers. As evidenced in the quotes that follow, participants acknowledged that they would continue to learn about themselves as teachers from their colleagues, the students and their schools once they commenced teaching:

‘I know I will need to sit back and listen to others with more experience’.

(Christine, focus group discussion)

‘I am nervous but very willing to learn from those around me’.

(Nadine, focus group discussion)

‘I know I will continue to learn my profession, and this will come from my experiences and my colleagues and the students’.

(James, focus group discussion)

Several participants, including Evan, indicated through their written responses that they would continue to learn through further study in the course of school-based professional development opportunities or through future university study:

‘I feel confident [that] as an educator, it will be extremely important over the coming years to continually update my professional abilities as a Design and
Technology teacher. I look forward to having a full-time class but I also want to enrol in a Master’s degree sometime in the near future’.

(Evan, written response teacher framework)

4.9.1 Summary of findings: Personal constructs of professional identity

Through their study on beginning teachers, Flores and Day emphasised the role of emotion in shaping teachers’ professional identity concluding that emotion is a significant and ongoing part of being a teacher (Flores & Day 2006, p. 220). While a number of studies (see e.g. Britzman 1991, 2003) have addressed the role of emotion as an aspect of professional identity development once teaching commences, this current study sought to explore the place of emotions at an earlier stage. In this chapter, the responses that participants identified and documented in regard to how they saw themselves as a beginning teacher were often emotionally-based. Feelings of nervousness and uncertainty were coupled with feelings of confidence and a commitment to teaching. These initial responses are revisited, compared and analysed in Chapters 5, 6 and 7 to further reveal the relationship between emotion and beginning teachers’ professional identity development.

4.10 Final conclusion

In this chapter, the structure of the four analysis chapters has been outlined and the findings of the in-university phase of the study have been presented. The chapter captured 20 participants’ expectations, predictions and future thinking about their professional identity and influences on this identity before they commenced teaching. The analysis and discussions presented were structured around the major theme and subthemes that emerged in response to the open-ended questions posed to participants during the focus groups and through the analysis of written data as documented through the completion of a modified version of the CReTE framework for conceptualising teacher professional knowledge. The findings revealed that there was awareness amongst participants that identity formation was a continuous process and that the process for them was in its infancy. The findings of this study concurred with past research in the field (Staples 2003) in that participants appeared to directly associate their professional identity with the curriculum that they believed they would deliver.
However, the curriculum that participants believed they would deliver was design-based, student-centred and focused on the broader aspects of Design and Technology such as sustainability. This finding differed significantly from that of Chester (2003) who found that the pre-service teachers in his study believed that they would teach only a Manual Arts curriculum; that is, a curriculum that was mainly physical skills-based. Pavlova and Smith (2003), cited in Chester’s (2003) work, further suggested that this belief had been informed through professional experience placements, stating that pre-service teachers had spent the majority of their time in schools involved in teaching Manual Arts. While comparative studies investigating the implementation of Design and Technology curriculum in secondary schools between Australian states have not been undertaken, anecdotal evidence would suggest that it is at vastly different stages across the eight state educational systems. Some states teach a curriculum that is predominantly Manual Arts and others teach with a Design and Technology curriculum focus. One reason for the disparity between the studies could be that in South Australia, the state in which this study was undertaken, the latter is generally the case.

What can be highlighted from this finding is that appropriate role modelling throughout participants’ university study, from both university tutors and school-based professional experiences needs to be reflective of contemporary practices if pre-service teachers’ preconceived traditional views of Design and Technology are to be challenged. Of further significance for this study was that participants viewed curriculum as changing and they further believed that they had the confidence and abilities to both embrace change and ultimately initiate it. At this very early stage of their teaching career, participants were already viewing themselves as change agents and held a positive view of the value of teaching and learning in Design and Technology education.

When questioned about the influences that had shaped their professional identity, participants identified a range of factors. These factors included life, work, university experiences and the influence of family or school-based mentors during professional experience. Many of the mature-entry Design and Technology pre-service teachers drew heavily on their past work experiences in industry to inform their emerging professional identity. This was not unexpected as Design and Technology education
has traditionally been strongly focused on an established body of technical ‘know-how’ (Williams 2006). The findings revealed that participants whose past histories enabled them to develop the technical skills and understanding related to working with materials and equipment were imbued with a heightened degree of self-confidence.

Findings suggested further that being parents of teenage children also served to shape professional identity through having the opportunity to develop good communication skills and, to some degree, an understanding the life-worlds or funds of knowledge (Moll et al. 1992) of the students that they would be teaching. When questioned about the predicted influences that could shape professional identity once they commenced teaching, the major influence was related to being accepted by teaching colleagues and students. Similarly, when asked to predict the influences that would enable self-authoring, participants referred to the acceptance of colleagues and senior staff members, such as the school principal. All participants acknowledged that the previously established expectations and procedures within the school coupled with internal school politics could potentially be governing factors in enabling them to teach what they wanted to teach in the ways that they wanted to teach. Participants stated that opportunities to self-author would probably need to wait until they had acquired more teaching experience in their school.

The chapters that follow present the data analysis and findings for the second stage of the study, the in-school stage.
Chapter 5
Stage 2 – The In-school Stage

5.1 Introduction
This chapter and Chapters 6 and 7 that follow, present an analysis of the second phase of the study, the in-school stage. A smaller group consisting of 10 of the original 20 participants were selected for this phase of the research. The basis of selection for the smaller group was discussed in the methodology chapter (Chapter 3) and included factors such as the location and type of school in which participants commenced teaching; the subjects that participants taught, for example, a Design and Technology and not a Food and Textile Technology (Home Economics) focus; gender; and a range of personal and professional histories. The aim of this reduction in participant numbers was to keep the data to a manageable scale but more importantly to ensure the data represented the diversity of participants who graduated from the Bachelor of Education Design and Technology program with a specific Design and Technology teaching focus.

Each of the chapters presents an analysis of the stories of the 10 participants, bounded as a collective case study (Yin 1994, 2003). Distinct themes of commonality and difference from participants’ narratives are revealed. In these chapters, the narratives no longer reflect predictions as discussed in Chapter 4 but are based on their reporting of actual, lived experiences (Connelly & Clandinin 1999) as told through interviews and presented through e-journal entries. Each chapter reflects one chronological stage of the data collection, from the first six weeks of commencing to teach through to the end of the first year of teaching. The structure implemented for each of the in-school phase chapters draws heavily on the narrative inquiry work of Clandinin (2007) to weave throughout detailed, re-storied narratives of participants. Through presenting aspects of findings as re-told narratives, it was possible to achieve immediate and intimate access to the complex experiences of lives in transition.

In this, the first of the three in-school analysis chapters, participants are introduced. The successes, tensions, challenges and emotions of the first six weeks of teaching, as
revealed through e-journal entries and the first interview, are identified. The context for the commencement of each participant’s teaching is described. The narratives of participants are told to capture the key themes revealed during this early phase of the in-school stage of identity transition. The key themes to emerge in this chapter are: the value of school-based mentoring; the tension of teaching subjects that had not been part of participants’ university study; the challenge of assuming responsibilities outside the classroom including becoming familiar with the internal politics of schools; and the success of developing positive professional relationships with staff and students. The chapter concludes by identifying a number of experiences that participants identified in the first six weeks as being significant to them personally in marking their transition into teaching.

5.2 The first six weeks of teaching

Few experiences in life have such a tremendous impact on the personal and professional life of a teacher as does the first year of teaching (Feiman-Nemser 2003; Findlay 2006). Findlay (2006, p. 511) argued further that when beginning to teach: *The initial experiences are imprinted, embedding perceptions and behaviours regarding teaching, students, the school environment, and their role as a teacher.* Feiman-Nemser (2003) and Findlay (2006) argued further that the first years of teaching should be seen as a phase in learning to teach. In this study, the e-journal entries of participants and the first interview indicated that the first six weeks of teaching appeared to have had a very significant impact on each participant as they grappled with finding their place in a new context and with understanding the changing nature of their personal and professional identity whilst dealing with the day-to-day complexities of becoming a teacher. It became apparent from the narratives of participants that they were in a transitionary situation where they were not only educating students but were being educated themselves into the role of teacher. The first six weeks were revealed as a period of challenge, tension, success and affirmation.

However, the lived experience of the individuals in this study cannot be fully realised without consideration of the context in which they commenced teaching. As a consequence, it is necessary to understand the complexity and nuances of each participant’s teaching context before presenting an analysis of the data. Table 5.1
below provides an insight into the rich and diverse contexts (Fossey & Crow 2011) of each participant, including their teaching context.

**Table 5.1: Contextual details of participants**

<table>
<thead>
<tr>
<th>Participant</th>
<th>Case study number</th>
<th>School location</th>
<th>Year levels and subjects taught in first year of teaching</th>
<th>Size of faculty</th>
<th>Past experience</th>
<th>Current interests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isaac</td>
<td>1</td>
<td>Country Adelaide Hills Catholic R-12 school</td>
<td>Years 10-12 Furniture construction Electronics Vocational Educational Training (VET)</td>
<td>3 teachers</td>
<td></td>
<td>Prosthetics designer and manufacturer</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>‘Target Works’ – specific community-based class for disinclined young adults, with an emphasis on teaching life skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aaron</td>
<td>4</td>
<td>Country South East of Adelaide Area school (DECD) Permanent appointment</td>
<td>Years 7-12 Care group Metal Wood Electronics Years 2-6 Design and Technology Health and PE ‘Target Works’ – specific community-based class for disinclined young adults, with an emphasis on teaching life skills</td>
<td>1 teacher: Aaron replaced the previous D&amp;T teacher who had taught in the school for 30 years</td>
<td>Mechanic</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evan</td>
<td>10</td>
<td>Adult Education re-entry college (DECD) One-year part-time contract, TRT work in primary and secondary schools Continued study – (Master’s degree part-time)</td>
<td>Information and Communications Technology Robotics</td>
<td>2 teachers</td>
<td></td>
<td>Works with computers in his spare time</td>
</tr>
</tbody>
</table>

139
<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>School Entry</th>
<th>Years</th>
<th>Subjects</th>
<th>Teachers</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brenton Mature-aged</td>
<td>26</td>
<td>Metro Adelaide high school (DECD)</td>
<td>8-9</td>
<td>Wood, Metal, Textiles</td>
<td>5</td>
<td>Studied two years of a Visual Arts degree before transferring into Education degree. Likes to design, draw and be creative in his thinking.</td>
</tr>
<tr>
<td>Peter Mature-aged</td>
<td>38</td>
<td>Metro Adelaide high school/vocational college (DECD)</td>
<td>8-12</td>
<td>Care group, Building and Construction, Pedal Prix, Wood, Metal, Maths</td>
<td>5</td>
<td>Builder, Renovates houses, Maintains cars.</td>
</tr>
<tr>
<td>Travis Mature-aged</td>
<td>27</td>
<td>Metro Adelaide private college</td>
<td>8-12</td>
<td>Wood, Metal, Pedal Prix, Health and PE</td>
<td>3</td>
<td>Builder, Renovates houses, Maintains cars.</td>
</tr>
<tr>
<td>Jason School leaver</td>
<td>22</td>
<td>Metro Adelaide private all-boys college</td>
<td>8-11</td>
<td>Home group, Wood, Metal, Electronics, Religious Education</td>
<td>5</td>
<td>Builder, Renovates houses, Maintains cars.</td>
</tr>
<tr>
<td>Neil Mature-aged</td>
<td>30</td>
<td>Metro Adelaide (DECD)</td>
<td>8-12</td>
<td>Home group, Wood, Metal, Photography, CAD</td>
<td>9</td>
<td>Builder, Renovates houses, Maintains cars.</td>
</tr>
<tr>
<td>Damien Mature-aged</td>
<td>28</td>
<td>Metro Adelaide</td>
<td>8-12</td>
<td>Home group</td>
<td>3</td>
<td>Studied three years of a Visual Arts degree before transferring into Education degree. Likes to design, draw and be creative in his thinking.</td>
</tr>
</tbody>
</table>
Each participant commenced teaching in the learning area of Design and Technology education; however, the school setting, the subjects and year levels taught, the extra-curricular commitments, the size and location of the Design and Technology faculty, and the professional responsibilities of each participant differed. Analysis of the data revealed that there were four distinct factors associated with the school context that were instrumental in shaping participants’ professional identity as they commenced teaching.

These factors were:

- The level of school-based support that participants received as beginning teachers including, for example, mentoring and induction programs
- The expectation that participants would teach subjects that had not been part of their university study
- Realising that teaching was more than teaching: assuming responsibilities outside the classroom and becoming familiar with the internal politics of schools
- The success of developing positive professional relationships with staff and students.

The following analysis examines each of the identified factors. To provide a detailed account of the identified themes and of the individual contexts, a narrative analysis (Creswell 1998) of participants’ stories is included. The introductory title associated with each narrative emphasises a key theme that emerged from the analysis. The
analysis commences with an exploration of the role that mentoring had in shaping participants’ professional identities.

5.2.1 The role of school-based mentoring in shaping beginning teachers’ professional identity

Findings from the 10 case studies concurred with the views espoused in the literature, that is, that mentoring is a key strategy for the effective induction and support of beginning teachers (Feiman-Nemser 2003; Carter & Francis 2010; Ingersoll & Strong 2011; MacGregor 2012). Mentors played a significant role in supporting the majority of participants to successfully transfer into school-based settings. However, the data revealed that the degree of formality in both assigning and assuming the mentoring role varied considerably between school sites. For example, only three of the 10 beginning teachers had been officially assigned a mentor. In five cases, a teacher or a number of teachers within the faculty voluntarily assumed the mentoring role. In two cases, beginning teachers were not mentored at all.

The findings of this study revealed two major mentoring roles that impacted on shaping participants’ professional identity and on their role as beginning teachers. The mentoring roles included providing:

- Personal and emotional support; and
- Teaching-related assistance and advice, including feedback on professional practice.

Participants identified personal and emotional support as being one of the most valuable roles of the mentor. Participants valued a mentor who was approachable, someone who they were able to talk to, to seek advice from and, at times, confide in about their anxieties and limitations without fear of being judged. The three re-told narratives that follow highlight the significant role that mentors played in shaping participants’ professional knowledge and identity in the early stages of transitioning into the role of teacher.

The significance of the personal and emotional support provided by the mentor is clearly evident in the re-told narrative that follows. Jason was initially assigned a mentor who was also the faculty coordinator. Jason’s narrative, as captured in
interview 1, identified the role of the mentor teacher as being instrumental in building his confidence, supporting his personal well-being and in shaping his professional identity. In contrast, the second part of this narrative, as told in the second interview, reflects Jason’s angst when his mentor became ill.

| **The value of a school-based mentor – ‘My mentor really cared about me and my teaching’.** |
| Jason entered the Bachelor of Education, Design and Technology program as a school leaver. He had successfully studied Year 12 Design and Technology scoring 20/20 in the Year 12 SACE. His teachers at school were his greatest influence in becoming a teacher. He always enjoyed school, particularly designing and making artefacts. |
| Jason commenced teaching with a one-year contract at a metropolitan Catholic boys’ college and became a permanent member of staff in his second year of teaching. In his first year of teaching, the school was undergoing a change of leadership, with the appointment of a new principal and deputy. Jason noted at the time that: |
| ‘There is a lot of change everywhere within the school ... I think change is good and I think it has been easier for me to come into a school that is transitioning. It means that there is change for everybody and not just for me’. |
| Jason felt that he commenced teaching with a strong knowledge and skills base in the subject of Design and Technology. However, he felt he lacked confidence in his ability to teach in the classroom setting of the home group and religious study class. Jason made an obvious distinction between his teaching role in the workshop environment and classroom. |
| He stated: |
| ‘I am not the best at standing up in front of a class and continually talking. I prefer to work with students on their designing and making’. |
| Jason’s confidence in his teaching improved significantly throughout the first term, mainly through the support of his mentor teacher, who was also the coordinator for Design and Technology. Jason stated: |
| ‘My mentor teacher has been there to support me in everything. I would just ask and he knew the answers, he is the guiding hand’. |
| However, in the second term, Jason’s mentor teacher took leave as a result of illness. During this time, Jason recalled that: |
| ‘I didn’t have anyone to fall back on, I felt lost at first. I didn’t realise how much I had come to rely on him at both a professional and personal level ... I did get a bit more guidance as the term progressed ... but it was never the same. The level of support was different. My mentor
really cared about me and my teaching. He enabled me to get through my first term of teaching.

When Jason’s mentor returned later in the year, the professional and personal support recommenced.

For Jason, the first six weeks of teaching was very emotional: it was a time of uncertainty and of questioning his own teaching abilities, particularly in subjects with which he was not familiar. It was during this time that the role of the mentor became crucial in providing empathy and reassurance. Britzman (2003) argued that an integral part of the development of professional identity is the role of emotion. Britzman further argued that teaching is a deeply emotional process and suggested that when teachers commence teaching, they find that one of the greatest surprises in learning how to teach is how deeply an emotional experience it is (Britzman 2003, p. 22). Feiman-Nemser (2003, p. 26) further argued that [t]he early years of teaching represent a period of survival and intense discovery, when the learning curve is steep and the emotions high.

The centrality of the role of the mentor in supporting beginning teachers throughout this emotional period is clearly evident in Jason’s narrative. Although Jason continued to develop professionally as the year progressed, he sorely missed the connection with a colleague who cared about him at both a personal and professional level.

In Brenton’s re-told narrative, the value of being immersed in a professional environment in which mentoring relationships with a number of teachers are developed is highlighted. For the majority of participants, and as exemplified by Brenton, mentors were instrumental in providing teaching-related assistance and advice. Evidence from the data also suggested that mentoring relationships were strongest when participants and the mentor/s taught the same subjects, topics or year levels.
Transition made easy – ‘Smooth as silk’

According to Brenton, the school-based initiatives and being mentored by colleagues from the same faculty made the transition into teaching:

‘... as smooth as silk; staff offered as much help as I needed. I was buddied up with a teacher from the Design and Technology faculty and with a Year 8 home group teacher. The Design and Technology staff encouraged me to take risks and to make mistakes from which I could learn. All the teachers have been really supportive and welcoming, smiling, greeting me, asking about me, how I am going ... this has really made a big difference about how I feel when I am at the school’.

An effective mentoring program, coupled with welcoming staff, enabled Brenton to develop increasing confidence in his role as teacher as the year progressed. Although Brenton was assigned a specific mentor, he found that all staff within the Design and Technology faculty assumed responsibility in supporting his transition. The staff had established a positive organisational climate (Carter & Francis 2010) in response to their recognised belief in the benefits of mentoring. In Brenton’s school, there was an established ethos of supporting beginning teachers. Brenton further stated that:

‘The guys that I work with, they have been so supportive. They have been great. At first, I was kind of afraid that when I asked questions, they would look at me like “come on mate, shouldn’t you know this?” There has been no hesitation; they just help me out. I also go and watch other teachers in my free lessons I still think about the prac we did at uni in terms of giving instructions, being explicit’.

(Brenton, in-school stage, interview 1)

Additionally, throughout these first weeks of teaching, Brenton began to realise that the initial pressure and anxiety that he felt as he commenced teaching had been the result of his own high expectations and not those of his teaching colleagues. Brenton elaborated further:

‘I was supported to reflect or self-critique. I was encouraged to sit in on other teachers’ classes if I wanted to. I had several repeat classes so this gave me an opportunity to reflect and fine-tune any aspects of the lesson. This provided me with a foundation [from which] to establish the expectations for each class’.

(Brenton, e-journal entry, Week 6)

Evidence suggested that working in close proximity with a mentor/s who taught the same subjects or classes also enabled informal discussions and conversations to take place throughout lunch and recess breaks. It appeared that the day-to-day pressures of
classroom teaching meant that finding the opportunity to set time aside for more formal or regular meetings was difficult.

The value of whole school commitment to the support of beginning teachers was also evident for Travis. While Travis continued to be mentored by colleagues throughout the year, including members of the school leadership team, he believed that the school-based induction for all new staff at the beginning of the year provided him with the opportunity to be successful in his teaching.

**Whole school induction – ‘Time to be prepared’**

Travis commenced teaching in an independent secondary college which provided beginning teachers with a week of intensive induction before teaching commenced. Travis described the first week at the college as being: ‘fantastic ... we didn’t have students!’

Travis commented further that:

‘This allowed me to have seven days of professional preparation with my colleagues. It enabled me to get a hold of all of the awkward things like getting to know other teachers’ names, know where rooms are, understand behaviour management policies, in fact everything to do with the physical teaching environment’. As a result Travis stated that:

‘I was able to feel very comfortable when the students arrived. I think this is a fantastic reflection on the management of the school’.

(Travis, in-school stage, e-journal, entry 1)

While the narratives of only three participants have been documented, the data from the 10 participants revealed that mentoring, or the lack of it, played a significant role in building the professional knowledge and identity of participants in this study.

For Aaron and Damien, the two participants who were not mentored, the transition into teaching was described as a time of isolation and uncertainty. The re-told narrative that follows further articulates Aaron’s initial shock and his struggle to survive the first six weeks of teaching without the support of a mentor.

**Isolation – Going it Alone – Aaron**

Aaron, a mature-age graduate, had been a carer for his four younger siblings and this had initiated his interest in becoming a teacher. However, Aaron had not enjoyed his own schooling seeing much of the learning as being irrelevant. Once he had left school, Aaron
completed an apprenticeship as a mechanic. He entered university study after several years of employment in a mechanics’ business.

Aaron commenced his permanent teaching appointment in a rural area school. He was the only Design and Technology teacher on staff. He replaced the former Design and Technology teacher who had taught in the school for over 30 years. The facilities in which he was to teach had not been updated throughout this time and the previous approach to teaching Design and Technology could be described as traditionalist with a heavy emphasis on teaching metal and wood to predominantly all-male classes. Aaron stated:

‘I was just handed the keys and pointed in the direction of the Design and Technology workshops. I am unsure if this is the same for all new teachers at the school or if it’s simply because of the learning area that I am in and that I am by myself’.

For Aaron, being the only D&T teacher on the school staff was initially a source of challenge and anxiety. From the commencement of his teaching position, he was expected to assume full responsibility for all administration, maintenance and teaching in the Design and Technology faculty. For example, Aaron was expected to order and prepare budgets for materials and equipment, to maintain equipment, and to oversee occupational health, safety and welfare (OHSW) as well as to plan, teach and assess student learning.

While initially viewing this responsibility as a source of tension, Aaron was able to look forward and predict that the experience was a learning opportunity.

He stated that:

‘… in time, this responsibility will prove invaluable, but at the moment it is very stressful and time-consuming’.

(Aaron, e-journal, entry 1)

Aaron was expected to assume the same responsibilities as the staff who had been teaching in the school for some time. He was expected to rise to the myriad of challenges that confronted him as a beginning teacher. Initially, the lack of induction and mentor support presented a major challenge and became a source of tension and stress. Aaron attributed the support of his wife and members of the wider community as being instrumental to his survival in the first six weeks of teaching. He also identified his maturity and level of personal resilience, developed through past work experiences, as enabling him to adapt to the roles and responsibilities he now needed to assume.

However, as the term progressed, Aaron viewed the challenge of not having a mentor or induction process as an opportunity for professional growth and suggested that:
‘As I have needed to source information myself, I now understand and know it better that if it had just been handed to me’.

(Aaron, e-journal, entry 2)

Like Aaron, Damien was not supported by a mentor. His first e-journal entry revealed initial self-doubts, as he asked himself: ‘Can I do this?’ Initial e-journal entries stated that little support was offered by colleagues in the first few weeks: ‘a time when I really needed it the most’. Damien further explained that:

‘The other D&T teacher is also new to the school so we have been left to set things up ourselves. There were no programs in place when we started; what I teach and how I teach it has been pretty much up to me. As a result, there were times when I thought ‘I can’t do this’’.

(Damien, e-journal, entry 1)

Feiman-Nemser argued that beginning to teach revolves around several themes including reality shock and the lonely struggle to survive (Feiman-Nemser 2003, p. 26). The research literature has further argued that the organisation of many secondary schools does not support collaboration between teachers thus reinforcing a sense of isolation and autonomy for the beginning teacher (Feiman-Nemser 2003, p. 26). An analysis of Aaron’s and Damien’s narrative supports this argument. However, for eight participants in this study, the reality shock and lonely struggle to survive (Feiman-Nemser 2003, p. 26) appeared to be mitigated through effective induction or mentoring.

5.2.1.1 Summary of findings: The role of school-based mentors in shaping beginning teachers’ professional identity

The literature (see e.g. Ballantyne & Hansford 1995; Tickle 2000; Flores 2001; Carter & Francis 2010; Ingersoll & Strong 2011, MacGregor 2012) stated that mentoring is used to address issues of teacher survival, skill development and, ultimately, retention in the profession. Carter and Francis (2010) argued further that the most effective mentoring processes emerged from a positive organisational climate in schools, that is, when the school had an established whole school ethos of supporting beginning teachers. This study concurred with these views.
The first six weeks of teaching was viewed by all participants as a time of uncertainty and, for a number of participants, a time of self-doubt. The personal and emotional support provided by mentor teacher/s and/or an induction process appeared to be pivotal in supporting participants during this time and throughout the first year of teaching. The role of mentors in providing teaching-related assistance and advice as well as opportunities for critical reflection and feedback on professional practice appeared to be instrumental in supporting this process.

The findings of this study reiterated McNally’s (1994) and Carter and Francis’s (2010) claim that less emphasis should be placed on the notion of assigning one mentor to a beginning teacher. Instead, the provision of a whole school ethos of supporting beginning teachers should occur. In instances where a collaborative approach to mentoring did not occur, for example, in Jason’s case, the sense of isolation was palpable when the mentor who he had been assigned took extended leave as a result of illness.

However, for one of the two participants who did not have the support of a mentor, there was an identifiable level of resilience and self-belief. As indicated by Aaron, he believed that he would continue to learn from his self-directed experiences and that through this he would strengthen opportunities for professional growth.

Evidence also suggested that mentoring relationships were strongest when participants and the mentor/s taught the same subjects, topics or year levels. For the majority of participants, the personal and emotional support of mentors provided opportunities to achieve what would have been more difficult if attempted in isolation.

The following section of this chapter identifies the tensions created and the questioning of professional identity that participants experienced when directed to teach subjects that were not part of their university study.
5.2.2 The tensions of teaching subjects that had not been part of participants’ university study

In Chapter 4, the interaction between professional knowledge and professional identity are explored. In many of the responses, it was difficult for participants to make a clear distinction between professional knowledge and professional identity. It appeared that the content that they taught and the pedagogies that they ultimately adopted were perceived to shape their professional identity and how they viewed themselves as effective educators. The data revealed that participants predicted that their subject and pedagogical knowledge coupled with their technical skills would facilitate professional identification specifically as a Design and Technology teacher. As a consequence, when a number of participants were directed to teach in a subject that was not part of their university study, they felt a degree of tension and anxiety.

The identified tensions and anxieties were a reflection of two issues. Firstly, as Watson suggested: *the concept of professional identity lies in the assumption that who we think we are influences what we do* (Watson 2006, p. 510). In this instance, participants thought of themselves as Design and Technology teachers who would draw on the professional knowledge that they had developed that was specific to this learning area. In addition, having to establish a new and more extensive professional knowledge basis with which to teach a new subject presented an additional layer of complexity at an already unsettling time. In Week 6 of Term 1, Jason stated that:

‘Teaching religious education continues to be a challenge for me, not just the content but I had prepared myself to teach in a practical environment. To begin with, I was not so sure of how to teach a theory-based subject, or how to operate in the classroom. I feel totally confident and capable in the workshop but I worry about my classroom skills. I know I am not the best at standing up in front of the classroom and continually talking’.

(Jason, e-journal, entry 3)

Jason made a clear distinction between the classroom and workshop as teaching spaces and in the differences he perceived in the role and identity required in each of these settings. As a Design and Technology teacher, Jason was very confident in demonstrating his technical ability. He felt comfortable projecting his professional identity when applying these skills through using tools and materials in a practically-
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...environment. However, it was apparent that Jason lacked confidence in his... identity when the focus of students' attention was on him and the spoken word rather than on the practical, skills-based approach of Design and Technology.

5.2.2.1 Summary of findings: Tensions of teaching subjects that had not been part of participants' university study

Similarly for Peter, teaching subjects that were not part of his university degree... More specifically, participants' professional knowledge could be identified... was never going to be met... to teach in a practical setting. Teaching in other learning areas appeared to undermine their confidence initially. In these cases, a personal dimension associated with participants' professional knowledge and, more specifically, their content knowledge directly

...unfamiliar. They had assumed that when they commenced teaching, it would be so much easier. (Aaron, e-journal, Week 6)

...Several students (primary level) are my most challenging to teach as I have little experience dealing with these age groups. These students seem to need... could be established. If I had just been teaching Design and Technology, it would have been so much easier. (Aaron, e-journal, Week 6)

...uncertainty of identity when teaching in another learning area coupled with teaching a lower-year level was also evident in Aaron's response, when he stated:

"One of the greatest challenges I faced in the first six weeks was teaching year levels and subjects that had not been part of my university degree, for example, teaching primary-level classes and Health and PE (Physical Education) to Year 9 students. These students (primary level) are my most challenging to teach as I have little experience dealing with these age groups. These students seem to need routine even more than middle-school students and the fact that I only have them for one or two lessons a week makes it hard for routines to be established. If I had just been teaching Design and Technology, it would have been so much easier." (Aaron, e-journal, Week 6)
connected their beliefs, self-images and professional identities as a particular kind of teacher (Smith 2007).

While teaching subjects that were not part of their university study created tensions for some participants, for others it was the realisation that teaching entailed assuming responsibility for roles outside the classroom as well as coming to terms with the internal politics of schools. These issues are explored in the section that follows.

5.2.3 Teaching is more than teaching: Responsibilities outside the classroom and the internal politics of schools

Teacher education programs provide the knowledge base from which pre-service teachers can build their understanding and identify what is relevant to teaching. Lamote and Engels (2010) argued that the role of the university is to support the professional identity development of pre-service teachers in a way that corresponds with contemporary views on learning and teaching. However, in assuming this role, teacher education programs do not prepare pre-service teachers for the range of non-teaching responsibilities that they need to assume or for the impact of internal school politics that they may encounter.

Fieman-Nemser (2001) and Fetherston (2006) argued that during the early stages of transition, familiarising oneself to the wide range of responsibilities associated with teaching in a specific context is of paramount importance in developing a sense of self as teacher. During this time, beginning teachers are expected to: assume the responsibilities of their more experienced colleagues; become familiar with administrative processes; establish professional relationships with staff and students; and understand the complexity of the site in which they have commenced teaching.

Britzman (1999) when discussing Lortie’s (1975) apprenticeship of observation, identified the skills required for school students to survive in classrooms. Britzman (1999) postulated that to be successful in their learning, students need to interact with the formal curriculum of teaching and learning and also be aware of the hidden curriculum. That is: *they need to be able to actively read [sic] the text of the teacher* and that includes the teacher’s moods, values and classroom expectations (Britzman 1999, p. 333). The hidden curriculum that Britzman identified for school students can
be equated to the one for beginning teachers. When beginning teachers complete their university study, they are familiar to varying degrees with the curriculum and the ways in which students learn but their awareness of the hidden curriculum of schools is limited. Learning and making sense of the varying and, at times, competing perspectives, expectations and beliefs of colleagues can be unsettling. Isaac’s re-told narrative highlighted the tension surrounding the hidden curriculum associated with assuming responsibility for administrative processes. Isaac’s tension was further intensified by the complexity of the internal politics that he experienced in his school.

**Isaac – The politics of schools**

Isaac commenced the Design and Technology Education program following a 20-year career in the design and manufacture of prosthetics. This work had afforded Isaac the opportunity to mentor a number of university graduates and it was through this mentoring role that Isaac decided to become a Design and Technology teacher. For Isaac, returning to university was ‘a desire to gain new knowledge and an acknowledgment that learning is never finished’.

Isaac commenced teaching in a permanent position at a Catholic high school in the Adelaide Hills. He was to teach Years 10-12 in Wood, Electronics and Vocational Educational Training (VET). His first e-journal entry identified that he felt overwhelmed

‘I felt overwhelmed by the amount of information regarding procedures, protocol and all that peripheral stuff that is part of being a teacher. We didn’t really deal with this at uni. But I think it is about being in a new school and not necessarily about being a new teacher; for instance, I was speaking to an experienced teacher who started at the school this year and she felt much the same’.

There was a sense of relief in recognising that he was not alone in feeling this way. In his first e-journal entry, Isaac suggested:

‘As a first-time staff member, you need to be ‘cut some slack’ for not knowing all procedures. I caught a couple of staff members having a snigger after I asked several times about a procedure just to be really sure. I was not impressed!’

Isaac also felt that there was a lack of empathy for someone new to teaching. He further stated:

‘I am sure they cannot remember the last time they made a big job change, school change, etc., let alone being an educator where you are supposed to be there to help people, not laugh at them’.

(Isaac, e-journal, entry 1)
While the level of information needed in order to understand administrative procedures caused Isaac a degree of angst, it appeared that there was a more significant factor that aggrieved him. That factor was the lack of mutual engagement afforded to Isaac by his colleagues. Wenger (1998, p. 152) argued that we become who we are by being able to play a part in the relations of engagement that constitute our community. Mutual engagement facilitates support and interaction between community members. In this instance, Isaac was not supported but ridiculed for his lack of knowledge.

The school in which Isaac commenced teaching was also undergoing plans for redevelopment in response to Federal Government Trade Training Centre initiatives. Planning for this development enabled Isaac to witness the place of internal politics in the school. As Isaac stated:

‘I am beginning to realise the significance of school politics. When the school development plan was released, there were certainly a number of varied points of view ... I realise that not everyone’s wants can be accommodated but not everyone thinks this way’.

(Isaac, e-journal, entry 2)

It appeared that although Isaac felt challenged by the expectations and experiences he was confronted with in his school, he was not overwhelmed. This was due in part to the positive and rewarding experiences he had had in the classroom with students:

‘The professional relationships that I have developed with students have been fantastic, and [as I am] mature aged, they don’t realise that I am new to teaching and this has been an advantage ... I find the teaching aspect in the classroom gives me confidence’.

(Isaac, e-journal, entry 2)

Isaac also acknowledged that his previous experiences outside the school setting had enabled him to see the bigger picture in regards to the internal politics of the school. Isaac was party, at times, to negative discussions and to the competing perspectives regarding the future development of the school. Isaac’s situation provides evidence of
the levels of complexity and the need to position oneself within this complexity that is experienced by beginning teachers.

As documented in section 5.3, Aaron also experienced the stress of assuming additional responsibilities associated with administrative roles. From the commencement of his teaching position, Aaron was expected to assume full responsibility for all administration and maintenance, as well as teaching in the Design and Technology faculty. Aaron was also encouraged to engage in a range of extra-curricular activities. These extra-curricular activities, however, provided Aaron with a sense of place in the school and wider community. In his fourth e-journal entry, he stated that: ‘I found the extra curriculum activities often associated with teaching in rural settings extremely rewarding’. Aaron became involved in a community-based education program for disengaged male students titled ‘Target Works’. As he stated:

‘This has been the most rewarding teaching for me so far as I am able to help these boys gain life skills that are relevant to their futures and of interest to them’.

(Aaron, e-journal, entry 4)

Aaron went on to explain that many of the boys in the program did not have a male influence in their lives. He elaborated:

‘It has been interesting the way that they interact and behave outside the classroom situation and their willingness to see me as a sort of mentor rather than a teacher or a person of authority to rebel against’.

(Aaron, e-journal, entry 4)

After just six weeks, Aaron’s e-journal entries reflected that he felt a sense of personal and professional achievement. His entries reflected a genuine commitment to students and to the wider community. He described the first six weeks of teaching as successful and he found teaching and student contact time to be rewarding. Aaron’s narratives also reflected high levels of resilience and positivism despite the high and complex workload demands, lack of mentor support and outdated teaching facilities. His narratives projected confidence and reflected an ability to be self-
directed in his learning. Aaron’s professional identity at this early stage appeared to be shaped by the successful relationships that he had developed with students, and through the opportunity to establish a sense of place and acceptance by students and the community.

Peter also assumed extra-curricular responsibility and, soon after commencing his teaching position, he became the manager of the college’s teams for Pedal Prix. Although Peter initially viewed his involvement in Pedal Prix as time-consuming, over time, he viewed it as an opportunity to develop professional relationships with students outside the classroom.

5.2.3.1 Summary of findings: Teaching is more than teaching: Responsibilities outside the classroom and the internal politics of schools

The review of the literature identified the attention that McLaughlin has drawn to the notion of school as:

... a workplace community to be viewed not only as a physical setting and formal organisation but as a social and psychological setting in which beginning teachers construct a sense of practice, of professional efficacy and professional community.

(McLaughlin 1993, p. 99)

According to McLaughlin, viewing the school context with this lens facilitates an understanding of the ways in which values, beliefs, prejudices and behaviour are played out and serve to shape the identity of those within. For participants in this study, understanding the ways in which internal school politics and how aspects of the hidden school curriculum were played out provided them with a degree of tension and uncertainty. While their university study, including professional experience, had provided the opportunity to develop subject and pedagogical knowledge, it appeared that it did not prepare them for the broader complexities of teaching. For participants in this study, the complexities included dealing with negativity from colleagues, understanding administrative procedures, assuming responsibility for extra-curricular activities and recognising the complex nuances of specific school sites.
The section that follows addresses the final major factor that appeared to shape participants’ professional identity in the first six weeks of teaching. That factor was the ability to develop positive professional relationships with teaching colleagues and the students they taught.

5.2.4 Acceptance by staff and students

As highlighted in the review of the literature, Coldron and Smith argued that:

New teachers in the process of establishing themselves in a school make choices and work hard to achieve what an outsider might describe as socialisation into the school culture.

(Coldron & Smith 1999, p. 715)

Coldron and Smith also argued that teachers’ professional identities are visible through their classroom practice. This became evident in the responses of many participants. Throughout the first six weeks of e-journal entries and during the first interview, strong and continued reference was made to how participants believed they were being perceived by and ultimately accepted by staff and students. These perceptions centred on participants’ classroom practice: developing relationships with their students was seen as being an integral part of their professional identity. For example, Brenton’s re-told narrative demonstrates this with particular reference to teaching in his Year 9 class.

**Brenton – ‘I need to prove to students that I know what I am doing’**

During the first six weeks, Brenton was ever mindful of presenting a professional teaching image to students. In his interview, he stated:

‘I wanted to look as if I knew what I was doing thus avoiding the whole thing of this teacher has no idea so let’s run amok!’

The professional identity that Brenton was keen to promote was centred on his classroom practice and, more specifically, on his ability to manage student behaviour.

‘There were a few cases where students tested their boundaries only to find that they hit a brick wall ... ME. If anything I have a sound grasp on managing students, establishing myself as a professional with specific boundaries before easing back as time progresses. This has been really effective, as many students only look a few years younger than me and I feel that they may take advantage of me being young and new to the school’.

(Brenton, interview 1)
It appeared that in the first few weeks of teaching, Brenton’s lack of confidence in his teaching ability coupled with not wanting to appear inexperienced resulted in the development of a relationship with students that was almost autocratic. At this very early stage of professional identity development, classroom control and power could be identified as being a core issue. Brenton was also mindful that his planning for teaching was on a lesson-by-lesson basis and, on several occasions, he realised that he spoke so fast and had planned so little that he ‘was left with plenty of time not knowing where to go next’.

However, on reflection, Brenton felt that the first six weeks of teaching had been surprisingly less challenging than he had first imagined they would be. An effective mentoring program, coupled with welcoming staff and the growing respect of students had enabled Brenton to develop increasing confidence in his role as teacher throughout the first six weeks.

When Jason commenced teaching, his concern also centred on the self-belief that his youthful appearance would be perceived by both staff and students as a reflection of inexperience and an inability to be an effective educator. Jason was concerned that, although he felt confident in his technical skill level and ability to effectively teach in Design and Technology education, his appearance could initially contribute negatively to shaping his professional identity. However, this was not the reality. Jason stated that:

‘While the first few weeks of teaching were really hectic, staff and students soon realised I had the knowledge and skills to do the job’.

(Jason, interview 1)

Jason’s initial concerns of needing to prove his capabilities to colleagues and students were soon negated. Jason elaborated further:

‘Things have got easier as the weeks have progressed. It becomes easier in the sense that you form relationships with staff and students and you receive positive feedback; this has meant I have become more confident and happy with my teaching’.

(Jason, interview 1)
Similarly, Damien stated:

‘I know that during the first few days I would go home and at various points thought ‘I can’t do this’. Initially I felt overwhelmed and unsupported. But since then, the interactions with staff and students have been really positive having meetings with staff and them giving you praise for what you have done or giving encouraging comments. It’s been great, I sort of feel accepted and welcome now. This has really built up my self-confidence’.

(Damien, interview 1)

Acceptance by colleagues and students was a major concern for Dianna who completed her studies of Design and Technology with a middle-school focus, that is, Dianna was registered to teach Years 6-10 and not the senior years (Years 11-12) of secondary schooling. The re-told narrative that follows brings to light the initial tensions experienced by Dianna in regards to acceptance by her colleagues and students.

**Dianna – ‘I need to prove to colleagues and students that I know what I am doing’**

Dianna commenced teaching at an independent R-12 school in the northern suburbs of Adelaide. In this permanent position, Dianna was employed to teach with a focus on middle schooling in the subjects of Information and Communications Technology (ICT) and Design and Technology. Dianna initially had concerns that, as a teacher with a middle-school focus, she would not be accepted by the Design and Technology faculty. She feared that a lack of technical expertise in working with a range of materials and equipment and a limited understanding of OHSW would be viewed as a weakness. In her first interview, she stated:

‘I am concerned that how I perceive my role as a middle-school D&T teacher will not be consistent with the roles, responsibilities and expectations of others in the faculty’.

Dianna had been employed by the school principal specifically to bring new ideas such as middle-school pedagogy to the school and to the Design and Technology faculty. It was a situation that Dianna feared was the directive of the school leadership team and not necessarily that of the staff with whom she would be working. It was with a great deal of nervousness and trepidation that Dianna attended the staff orientation program to meet her colleagues.

By Week 6, Dianna had recognised that she needed to find a balance between:

‘… being who I want to be in the classroom and pleasing others’. (interview 1)

This was in reference to her teaching methods which she described as student-focused in comparison to the more traditional ways in which some of her colleagues in Design and
Technology taught. This was particularly the case in wood and metal, where Dianna introduced design processes with Year 9 students who were developing design folios for the first time. To address her limited experience in working with materials such as wood and metal, Dianna used her free lessons to further refine her technical skills with the help of her colleagues. However, she felt more confident in teaching ICT where she believed she could:

‘… be who she wanted to be and teach in ways that she wanted to teach’.

After several weeks of teaching, Dianna acknowledged that:

‘We all (colleagues) do our own thing; we each have our own strengths and weaknesses; at this stage, my strength is teaching computing’. (e-journal, entry 2)

However, Dianna’s e-journal entries throughout the first six weeks revealed that, at times, she wished she was still at university as it was there that she felt more strongly supported by her peers. Of the school setting, she stated that:

‘I find that relying on my own initiative is challenging, sometimes I feel alone and isolated within the faculty’. (e-journal, entry 3)

The researcher questioned whether teaching in an all-male faculty was a contributing factor to the experienced feelings of isolation. Dianna’s response was that she did not believe this was a gender issue (with an all-male faculty) but was a reflection of the hectic pace of teaching, learning to teach and the demands of family life. She stated:

‘There is so much to do and little time given to when to do it ... and I try not to take too much home’.

(Dianna, interview 1))

For Dianna, the transition from university, where she had felt supported and valued as a high-achieving student, into a school context in which she was still seeking acceptance, was unsettling. Additionally, for Dianna, as the primary caregiver of her young child, juggling the demands of work and home were, at times, an issue. The support of her family and close friends made circumstances less complex by providing child care. However, the role of single parent added complexity not only to her teaching role (in terms of time management) but, for Dianna, there was also an internal struggle between the two identities that she now assumed; that of parent and that of teacher. The tensions that can arise between the expectations of personal and
professional roles and how this tension shapes professional identity are explored in the next chapter.

5.2.4.1 Summary of findings: Acceptance by staff and students

As the literature has argued (Staples 2003), many constructions of collective teacher identity in Design and Technology education have focused explicitly on the teachers’ functional roles, that is, the transmission of specific subject know-how (Staples 2003, p. 300). Whilst the knowledge that participants brought to teaching was conceptually-based, the transmission of that knowledge was very visible to colleagues and students, a result of the practical nature of its application.

In the first six weeks, participants made continued reference to how they believed they were being perceived by and ultimately accepted by staff and students. Working in practically-based settings with a range of diverse materials and equipment meant that participants’ levels of competence very quickly became apparent to colleagues. This study identified that once colleagues deemed that participants could competently and safely perform their teaching role and that it aligned with their own practices, identity became validated and participants became accepted and were then encouraged to take increasing ownership in regard to lesson content and pedagogy.

The visibility of participants’ capabilities was also highlighted through the collaborative nature of teaching Design and Technology education in shared workspaces. This is in contrast to the majority of other subjects which are taught primarily behind closed doors within individual classrooms where, as a consequence, limited opportunities are provided for colleagues to critique, evaluate or to provide immediate advice, support or encouragement to those who are commencing their teaching career. This was reflected in the literature (Feiman-Nemser 2003) which highlighted the isolation that beginning teachers feel once they commence teaching.

In this current study, positive feedback and responses from colleagues affirmed aspects of participants’ classroom practice and, in so doing, imbued participants with confidence and enthusiasm for their teaching roles. As a consequence, the initial self-doubts and tensions that participants had experienced were soon dissipated. There were exceptions: one participant, Aaron, spoke of the experiences of isolation as he
commenced teaching. This was a result of being the only Design and Technology teacher on the school staff. Jason also spoke briefly of the isolation he felt when his mentor teacher took leave through illness. However, for the majority of participants, the support of Design and Technology faculty colleagues and teaching in shared spaces negated feelings of isolation and, instead, offered opportunities for support and guidance.

One significant finding from this study was the willingness of colleagues to support participants in negotiating the contexts of their schools. The marginalisation and resistance to change that past research (Reynolds 1996; Coldron & Smith 1999; Fetherson 2006) had alluded to did not eventuate. Where this current study has extended thinking is in regards to how quickly the majority of participants became aligned with and belonged to a community of practice (Wenger 1998).

This chapter concludes with the experiences that participants identified as being significant markers or moments that they believed represented their transition into the role of teacher.

5.3 Becoming a teacher – Significant markers of transition

It was of interest to note that during the first interview, a number of participants highlighted a particular incidence, experience or situation through which they identified themselves as finally being ‘a real’ teacher. These moments reflected participants’ sense of place or belonging in the profession of being a teacher. Furthermore, these experiences appeared to signify an identity shift or marker of transition for participants. For example, Peter’s emotions came to the fore as he was introduced to all students at an assembly in the gym in Week 1. Peter recognised that at this particular moment he was no longer being identified as a university student but as a teacher. He stated:

‘I stood proudly in front of the whole school and thought to myself, I am now a teacher’.

(Peter, e-journal, entry 1)
For Evan, the marker of transition was closing the classroom door behind him for the first time and standing in front of the class and thinking:

‘I can take this lesson in a completely different direction, I am the teacher now’.

(Evan, e-journal, entry 1)

For Brenton, the marker of transition occurred:

‘… when they gave me the keys to the school alarm! I know it could be considered a small thing but it was significant to me it showed that they trusted me and that I was one of them’.

(Brenton, interview 1)

In contrast, several participants identified a marker of transition later in the first term as they were exposed to new events and experiences such as parent–teacher interviews and school camps. For instance, for Dianna, the marker of transition did not occur until Term 2 when she had her first parent interviews. She stated:

‘That [the interviews] was something that I was worried about and everyone was telling me ‘don’t worry, it is just all the good parents that come and want to check you out’, and that made me feel worse. I wrote up these massive notes on what the students had done and I spent way too much time on preparing for these interviews but I went into them feeling really confident in my role as a teacher’.

(Dianna, interview 2)

Similarly, Travis, whose marker of transition occurred when he completed the student reports in Term 2, stated that:

‘Even when I was young I thought this is what a teacher does, writes reports and now I am doing it’.

(Travis, e-journal, entry 4)

Not all participants identified a specific moment that could be identified as a marker of their transition into teaching. However, those participants who did expressed that the moment was emotionally charged. In several cases, the moment captured or
reflected a memory from the past, a moment of arrival, or a gesture of acceptance into the profession of teaching.

5.4 Final conclusion

In this chapter, the 10 participants and the contexts in which they had commenced teaching were introduced. The successes, tensions, challenges and emotions of the first six weeks of teaching were revealed through e-journal entries and the first interviews. The key themes to emerge in this chapter were: the value of school-based mentoring as a pathway to developing self-confidence; the tension and professional growth built through teaching subjects that had not been part of participants’ university study; a recognition that the role of teaching was diverse and complex and might necessitate the positioning of one’s self within the internal politics of the school; and, that gaining the acceptance of colleagues, students and the wider school community was central to shaping beginning teachers’ professional identity.

The narratives from participants indicated that the development of professional identity was not initially shaped by their own level of comfort or self-acceptance. Professional identity, in this early stage of transition, appeared to be primarily shaped by how participants believed they were being perceived by others. As argued by Fetherston (1993, p. 95): [t]he new teacher is constantly on the stage and urgently needs to develop a performing self with whom he or she can live comfortably.

While the demands of beginning to teach and its inherent responsibilities entailed the continual analysis of and reflection on their beliefs and practices by participants, the data revealed that this analysis was strongly influenced by the responses and feedback received from colleagues, including mentors and students. Developing an identity with which one comfortably could live was, at this stage, developing an identity that others, that is, colleagues and students, viewed as being acceptable.

These findings supported the conclusions of Feiman-Nemser who found that the beginning teacher’s learning agenda is ultimately bound up with the personal struggle to craft a public identity (Feiman-Nemser 2003, p. 26). For beginning teachers in this study, the development of an accepted public professional identity appeared to be a
central element in the transition from pre-service teacher to beginning teacher (Beauchamp & Thomas 2009). For participants, becoming a teacher was a matter of acquiring and then redefining an identity that was socially legitimated (Coldron & Smith 1999).

The review of the literature identified a number of researchers (see e.g. Lacey 1977; Veenman 1984; Vonk 1993; Furlong & Maynard 1995; Tickle 2000; Feiman-Nemser 2001; Fetherston 2006; Flores & Day 2006) who argued that beginning teachers move through a number of distinct phases as they shape an identity that is acceptable to students, colleagues and the wider school community, that is, as they craft their public identity. Words such as transition shock (Veenman 1984); idealism and survival (Fetherston 2006); and tension, anxiety and uncertainty (Flores & Day 2006) have been used by researchers to capture the emotion of beginning teachers as they continually analyse their beliefs and teaching practices.

While the narratives of participants reflected a degree of tension, anxiety and uncertainty as they transitioned into the first six weeks of teaching, their experiences appeared to be less traumatic than indicated by studies documented in the research literature. The possible reasons for this included: the fact that participants appeared to have developed, to varying degrees, professional identities through combining parts of their past, including their life and work experiences, often in an associated trade; their maturity (career switchers); their study at university, including TAFE study and school-based professional experience; and the experiences with which they were confronted in the first six weeks of teaching.

The level of disconnect between these aspects and meeting the expectations of colleagues and students appeared to be minimal. In this study, the connections between participants’ pasts and the immediate created a degree of continuity between different identity trajectories within what Wenger termed the nexus of membership (1998, p. 160). For instance, in Chapter 4, it was revealed that the majority of participants defined their professional identities primarily through specific characteristics and/or abilities they would bring to their teaching, for instance, the depth of content knowledge and technical skills required to effectively teach Design and Technology education. When the majority of participants commenced teaching,
their level of content knowledge, including technical skills, and their understanding of safe work practices were immediately acknowledged and validated by colleagues and students.

This was evidenced by Jason when he stated that:

‘While the first few weeks of teaching were really hectic, staff and students soon realised I had the knowledge and skills to do the job’.

(Jason, interview 1)

The chapter that follows provides a broader analysis across participants’ narratives to offer a collective account of the challenges and tensions as well as the successes of the first six months of teaching.
Chapter 6
The first six months of teaching

6.1 Introduction
This chapter draws on the responses of participants to the questions posed in the second interview held at the end of Term 2 and on their e-journal entries to offer a collective account of the first six months of teaching. The chapter presents and analyses the data to provide evidence of participants’ opportunities to self-author in order to determine if participants were able to integrate their own identity into their teaching role and to actively pursue the professional goals that they valued (Day et al. 2006).

The narratives of participants no longer reflected the immediacy of emotions associated with beginning to teach. Narratives that initially spoke of uncertainty, self-doubt and questioning in Chapter 5 were replaced with narratives that echoed a sense of growing confidence as participants became more familiar in the knowledge associated with the structure and culture of schools, that is, the daily routines and expectations, and with finding a voice in acting on their beliefs in regard to teaching.

Throughout the analysis of participants’ narratives, thematically coded categories emerged and these became the headings under which the findings in this chapter are discussed. The identified headings were:

- Finding a Voice – The Ability to Self-Author
- Professional and Personal Identity Development – The Duality of Identity
- Continuing the Transition – Challenges, Tensions and Affirmations.

Each of the identified themes is discussed in the analysis that follows. The analysis commences with an exploration of participants’ ability to self-author (Sloan 2006; Soreide 2006), that is, to develop and act on their beliefs. Opportunities for participants to create patterns of personal meaning and to identify themselves in their teaching are also identified (Coldron & Smith 1999). This chapter concludes with a
discussion which reflects on the significant findings in relation to identity formation which emerged from the three identified themes.

6.2 Finding a voice – The ability to self-author

As reflected in Chapter 5, the data collated from the first six weeks of teaching suggested that, at that time, participants were focused almost exclusively on: developing their ability to integrate their subject content knowledge into their classroom practice; developing their pedagogical approach to teaching; and, most significantly, being accepted by their teaching colleagues and, in some instances, by their students.

After six months of teaching, as revealed by the data, participants were able to look beyond their classrooms and were beginning to make informed choices in accommodating aspects of the process of socialisation into their own teaching and their students’ learning (O’Connor & Scanlon 2005; Pietsch & Williamson 2010). That is, participants were beginning to consolidate a personal knowledge of self as teacher, not only based on the feedback and acceptance of others as was primarily the case when they commenced teaching, but on how they wanted to be defined by others and by themselves as teachers. For example, Peter stated:

‘Originally it was the weight of the worrying about the expectations of others that was the biggest thing to shape my identity. This has only changed this term. I have got to the point now where my biggest thing is my expectation of myself and the critique of myself. I often say ‘Oh, it is past the point of where I ask myself: am I doing what I am expected to do’? I am getting positive reinforcement from other staff and now it’s me saying, ‘Hey, you need to take a different direction here’. For example, if the kids are not engaged, I ask myself ‘what are you doing’? It is now more about me and my expectations of what I want to do and what I want to achieve. So, that is something that has changed. I don’t really care too much about what other people think now because I know that, by what they are saying, I am doing an OK job’.

(Peter, interview 2)

After six months, Peter appeared to have taken considerable ownership of shaping his professional identity. In the interview, Peter made further comment about the need to critique internally and reflect on what he was doing ‘rather than on what someone
else is thinking about what I do’. Interestingly, he also commented during the interview that at university he felt that the ‘reflection thing was a waste of time’ but now he viewed it as being important as it had provided him with ‘a method of initiating continual improvement in his teaching practice’ (Peter, interview 2).

O’Connor and Scanlon (2005) argued that beginning teachers must have the opportunity to integrate their own identity into their teaching role. The authors stated that it is this nexus that brings about individuality and uniqueness to a person’s teaching. Some participants in this study appeared to have had the opportunity to bring individuality and uniqueness to their teaching after just six months of teaching.

For example, Isaac stated that as he became more experienced he believed that his professional identity became:

‘… more closely aligned to who I am, to what I have done in a previous life, and to who I want to be as a teacher’.

(Isaac, interview 2)

Isaac further stated that, to a large extent, he felt that he now shaped his identity rather than relying on his colleagues to provide guidance and acceptance. During the interview, Isaac discussed the connectedness between the skills and knowledge that he had brought to teaching from his past work and his life experiences and his recently developed teaching skills in shaping his professional identity. Coldron and Smith (1999, p. 719) argued that every aspect of teachers’ work has a personal dimension, imbued with feelings and understandings that create patterns of personal meaning that enable teachers to find their voice and create their own sense of professional identity. Connelly and Clandinin further argued that it is this personal dimension that enables teachers to reflect critically and ask ‘who am I in this situation? instead of ‘what do I know in this situation?’ (Connelly & Clandinin 1999, p. 3). Isaac’s response clearly evidenced that he had found opportunities in his teaching to create patterns of personal meaning and to identify self and ask ‘who am I’?
This finding was in contrast to that reflected in the review of the literature (see e.g. Furlong & Maynard 1995; Berliner 2001; Feiman-Nemser 2001; Fetherston 2006; Pietsch & Williamson 2010) in which the first year of teaching was predominantly characterised as a novice stage. For example, in Pietsch and Williamson’s (2010) study of seven recently graduated primary teachers, opportunities to exercise independence in shaping and maintaining their sense of self-identity appeared to be overwhelmed by the need to navigate the somewhat rough waters and dangerous shoals of beginning to teach (Pietsch & Williamson 2010, p. 331). However, in this current study, the data has suggested that beginning teachers rapidly moved beyond the navigation of rough waters. The majority of participants swiftly demonstrated a capacity to exercise independence. In fact, participants appeared to be encouraged to introduce new content knowledge into the learning area and, in some instances, to adopt innovative pedagogical approaches. However, the timing of the opportunity to teach in ways that participants wanted to teach, that is, to be the teacher that they wanted to be appeared to follow a relatively brief period of ‘proving oneself’ to, or aligning oneself with colleagues in terms of technical skills and safe work practices.

For Isaac and a number of study participants, it appeared that the development of knowledge in one domain was contributing to and determining development in another (Pietsch & Williamson 2010). Isaac, like a number of participants, had commenced university study with knowledge and skills from trades and life experiences that were associated with teaching in Design and Technology. Renzaglia, Hutchinson and Lee (1997) argued that beginning teachers who have an established core of beliefs and practices are more likely to experience not only satisfaction in their roles as teachers but to act as change agents in their classrooms and schools. Renzaglia et al. (1997) further argued that personal beliefs, knowledge and understanding can serve as filters for new information and experiences that confront beginning teachers.

For example, Damien was provided with the opportunity to transfer his past experiences of working with sustainable materials and to act on his beliefs about teaching as he developed and introduced a number of new design-based projects to improve the quality of student learning outcomes. He stated:
‘It has been left entirely up to me to teach what I want to teach. Sometimes, I take the easy road and opt for projects that worked well when I was on practicum or [that] I have seen in other schools. I have tried a few new projects with a sustainability focus to try and inject some life and design work into Years 8 and 9. I did this in response to the poor design work that the Years 10, 11 and 12s were submitting’.

(Damien, interview 2)

Participants had expressed initial concerns that they would not have the opportunity to develop aspects of the individual uniqueness that they could bring to teaching or that what they did bring to teaching would not be valued by colleagues; however, this did not prove to be the reality. The study revealed that participants were able to make choices in regard to the existing traditions, characteristics and dispositions and, in so doing, they were able to professionally locate themselves whilst informing others of who they were (Coldron & Smith 1999).

In the review of the literature, Coldron and Smith (1999) further argued that tradition can constrain but, at the same time, can provide opportunity for beginning teachers to initiate creative action and change. This was particularly the case for some participants in this study where the current dynamic nature of the subject facilitated the development and implementation of evolving curriculum knowledge and pedagogical approaches. Participants were not acted upon by the powerful pervasive school culture such that individual teaching philosophies and beliefs are subsumed into the existing school culture (Pugach 1992, p. 142). Instead, after what appeared to be an initial and brief stage of validation, all participants were able to assume ownership in what and how they taught, to participate in ongoing change and, in some schools, to initiate change. For example, as Peter, Jason and Isaac stated:

‘I am lucky enough to have a coordinator who is very progressive. He wants to get away from ‘build me a wooden box’ and wants to get into [the] true design and technology way of going about it, for instance, talking with the students about their ideas and their solutions to problems. This is the way that I like to work. I know they (the staff in the D&T faculty) are getting to a point where my learning and my experience are recognised as being valuable to the school because I have been trained that way at uni and that is the way they want to go. I feel quite comfortable with this. So, yes, I can be the teacher I
want to be to some extent and I know it will be even more so in the future as the school continues to change the way in which it teaches D&T’.

(Peter, interview 2)

And:

‘There is a transition here [at the school] from, I guess, the older style of teaching from being just practically-based to now encompassing a whole range of methodologies and pedagogy. The teachers I work with are willing to accept my ideas and the direction I want to be going with my teaching. I have a say over what I do and how I want to do it. For example, I have just introduced a booklet for the middle-school students where they document theory and their practice. It used to be completely machining but now we are moving to 30% theory and 70% practical. Teaching and documenting to reflect this shift is one thing I have excelled at. I think it is because I am straight from uni where we did this kind of thing and because I am happy to try new ideas. Hopefully, I am one of the driving factors towards the changes the school wants to make’.

(Jason, interview 2)

And:

‘I have been able to shape some aspects of my teaching, like the Year 12 D&T class projects. When I first started, I implemented existing projects because it was easier and sort of expected that’s what I would do. Some of the teachers are aware that I can bring new ideas that create interest and increase our student numbers so most teachers will go with the projects I have put forward’.

(Isaac, interview 2)

While it is generally accepted that there is a propensity amongst more experienced teachers of Design and Technology to retain initial beliefs and resist change (Paechter & Head 1996; Mawson 2009; Wells & McGlashan 2009), findings from this study have suggested that this was not the case. In contrast, the majority of participants in this study appeared to have been involved in identification and negotiation within a community of practice that resulted in shared, accepted and changed meanings (Wenger 1998). As a consequence, participants and the new ideas they brought to teaching did not appear to be marginalised in any way. This finding was significant as
it did not reflect the anticipated resistance to change to which the literature (Pavlova & Smith 2003; Bullough 2005) had alerted the researcher.

This willingness of staff to accept and embrace the changes that beginning teachers presented to their schools may have been a result of several contributing factors. One factor could be associated with the changing nature of Design and Technology subject content and the move toward implementing new and often digitally-based technologies, for instance, 3-D milling, printing and computer-aided design (CAD) programs and electronics packages. Barlow (2002) argued that beginning Design and Technology teachers are generally required to possess a significantly different and more expansive knowledge base compared to that of their more experienced colleagues. Throughout their university study, participants had been supported in developing contemporary views on learning and teaching and in developing a subject knowledge base that was significantly broader than that of their in-service colleagues. Once participants commenced teaching, this study’s findings indicated that they were encouraged by their colleagues to draw on this knowledge to introduce new ideas. As a consequence, some participants were already becoming change agents within Design and Technology faculties (Renzaglia, Hutchinson & Lee 1997).

Another enabling factor that may have contributed to an acceptance of the new ideas that participants brought to their teaching could be related to the changes in Design and Technology pedagogy. Throughout the last 20 years, changes to curriculum have encouraged Design and Technology teachers to move away from a narrow instructional craft orientation to one which acknowledged the consequences of technology from a social perspective. This pedagogical shift has been one that has moved from a didactic to a constructivist approach to teaching and learning (Middleton 2006).

Pavlova and Smith (2003) found that there had been strong resistance to curriculum change by Design and Technology teachers with many teachers continuing to teach what they were familiar with to enable them to remain in their comfort zone. However, this view did not appear to be supported in this study, as evidenced by Peter who stated that:
‘I am well supported by my colleagues. I am now in the process of rewriting all of the assessment in the D&T programs so they become more student- and parent-friendly, like changing the generic terms from SACSA outcomes and converting it into plain English. I have been trained recently in using SACSA and in that sort of methodology whereas other teachers, especially those that have been teaching for 30 years, find it all too hard. I feel more comfortable with that curriculum stuff, and staff are really happy for me to do it’.

(Peter, interview 2)

Peter’s narrative identified that the willingness of colleagues to accept and embrace the changes that were presented to the schools by the beginning teachers could also be a reflection of demographics. Professional profile data (DECD 2013) revealed that the largest cohort of Design and Technology teachers (32.9%) in the state in which this study was undertaken were in the 50-59 year age group with 10.8% in the 60 and over group compared with only 16.7% who were in the 20-29 year age group. As a consequence, a high percentage of Design and Technology teachers may be looking towards retirement; therefore, the idea of adopting and implementing curriculum with a new focus and methodological approach is likely to be a reduced priority. However, these teachers appeared to be willing to both support a new generation of teachers to bring about change in Design and Technology education and to pass on their own knowledge and expertise. The process appeared to facilitate a blending of the elements of the past with aspects of the present, thus providing stability for the field but, at the same time, recognising a need to change for the future growth of the learning area.

The findings of this study have identified that the impetus for participants to initiate change and to self-author was as a result of two effects. The first effect, as identified by Renzaglia et al. (1997) and addressed earlier, was associated with the established core of beliefs and practices developed through life histories, including personal and professional experiences, that participants brought to the teacher education program, while the second effect was associated with the teacher education program itself including its duration, structure and content.

The program in which participants were enrolled was a four-year undergraduate program. Throughout this time, participants had the opportunity to close the
knowledge gaps (Rutland 2001; Atkinson 2012) and to re-evaluate and redefine previously held understandings and beliefs of what it meant to be a teacher of Design and Technology. Similarly, the structure of the program, as outlined in the literature review, appeared to provide participants with opportunities to observe and critique both their own as well as others’ understandings of what being a teacher and a teacher of Design and Technology education could be. This was evidenced by Dianna who believed that what she learnt during her studies at university continued to influence:

‘… what I do and how I do it. I think I bring new ideas into Design and Technology, for instance, teaching with a design focus and introducing design folios. I really value this aspect. I can see how we cannot stick to the traditional wood and metal. It’s not just about going into the workshop and making something; it’s actually about students working on their own designs’.

(Dianna, interview 2)

Furthermore, the findings of this study did not find any significant difference in the beliefs or degree to which the learning area was valued between those participants who entered the program as mature-aged students, that is, career switchers (Richardson & Watt 2006), or those who were school leavers in regards to their willingness to embrace change. Findings suggested that both cohorts were equally open to change and were strong advocates for Design and Technology education.

However, while the majority of participants were unconstrained by their professional beliefs or by that of their colleagues in their ability to self-author, the parameters imposed by the availability of resources and teaching spaces did provide constraints. For example, Travis stated:

‘What and how I teach is currently based on the space provided. I am hoping that I can push [senior staff] enough to eventually end up with what I want facilities-wise down the track. At the moment, we have a very small tech room with limited storage so that limits what projects we can do. The staff [who] I teach with aren’t the issue, it is space and storage. There are no metalwork facilities: if we want to weld, we have to go outside with the portable welders’.

(Travis, e-journal, entry 5)
Similarly, while Peter was strongly supported by his colleagues, he also noted the limitations imposed by budget constraints when he stated:

‘Obviously there are budget restraints and school management decisions, for instance, where they want to go and, being a vocational college, they are looking towards the VET side of things so it tends to be skills-based. For that, we need new equipment and resources’.

(Peter, interview 2)

The emphasis on the technical nature of the Design and Technology learning area was highlighted in Travis and Peter’s responses. Analysis of the data identified the constraints of limited resources and facilities when it came to enabling participants to self-author and to teach specific content. The contextual constraints of facilities, materials and equipment conspired to identify a unique and subject-specific element to either constraining or enabling professional identity formation. Teaching and learning in Design and Technology education requires substantially more specialised resources than a conventional classroom, smart-board or computer.

The following section of this chapter identifies the interplay between personal and professional identities and draws attention to the possible tensions and challenges that this interplay may present to beginning teachers.

6.3 Personal and professional identity development – Duality of identities

This study has argued that identity is in a constant state of formation and transformation in response to external factors and to internal dialogue. As participants in this study continued to identify themselves in the role of teacher, there appeared to be a growing awareness for two participants, in particular, that there was a disparity between identities, that is, between the identity of self and that of teacher. In this section of the analysis, the existence of an interrelationship between personal identity and professional or situated identity is examined.

Erikson (1980) concluded that personal identity is reflected in the goals, values and beliefs that one shows to the world, and that social or situational identity is a sense of group identity and the consolidation of aspects that have been integrated into one
‘sense of self’ from the group to which one belongs (Erikson 1980). In this study, personal identity was interpreted as defined by Erikson; however, social identity was interpreted as professional identity; that is, the sense of group identity and the consolidation of aspects of that identity that one is expected to assume through being a teacher. While numerous studies (see e.g. Coldron & Smith 1999; Feiman-Nemser 2001; Bullough 2005; Flores & Day 2005) have illustrated how teaching contributes to and shapes the person, only a limited number of studies (e.g. Nias 1989; Britzman 2003; Alsup 2006) have specifically investigated the tensions that arise from the investment of the personal into the role of teacher. This study has drawn on the research and the narratives of two participants to further investigate these tensions.

For one participant, in particular, in this study, the growing awareness of the interrelationship between personal and professional identity led to a degree of internal tension and after six months of teaching, to a sense of losing his personal identity. Brenton’s re-told narrative clearly articulated his feelings of identity loss and compromise.

**The duality of identity -- a cause for tension**

‘I realised that I needed to be a role model, and I realised that if the kids were to respect me, I couldn’t behave in ways that were worse than the kids themselves! I think for me there was initially a big difference in me as Brenton outside teaching and me as Brenton the teacher. I try to speak correctly (not swearing like I tend to do outside school). I still joke around with the kids but not as much as I did at first. I try to be more professional in the way I talk to others and the way I dress (no shirt hanging out of my pants). When I left uni, I didn’t really think that it was going to be like that. I thought it would be, “Hey, I can be a bit more of a dick, a bit more fun, yeah, she’ll be right!”

‘I can still be myself to some extent as I have become more confident but I have found that my teaching life has become part of my outside life which to me I feel is a negative. I am not so laid back, a bit more on edge about how people might perceive me. The kids are always analysing what you do. It doesn’t matter what you say, you might have made a comment or gesture months ago and they remember. So now, even when I am out with people I don’t know that well and even with my friends, I am a little less outgoing than I once was, which I see as being a bit of a shame’.

‘If I go out, like into the city, I will have a few less drinks than I once did. Really anywhere in public I am mindful that I might see kids I teach. I was in Hungry Jacks the other day with my Dad. I was looking pretty raggy. I wouldn’t say I am highly groomed when I am not at work. We were served by a kid I teach and he said to me in a surprised way, “You’re getting
Hungry Jacks!” It made me feel edgy and I don’t like that. It felt like I couldn’t be me even on the weekend when I am with my Dad’.

(Brenton, interview 2)

After six months, Brenton had realised the complexity of identity formation and the interrelationship between identifying who he is in his role of teacher and being himself outside school. Brenton was the only participant who really elaborated so explicitly on this duality of identity and the disorientation it caused him. Brenton appeared to be faced with a struggle as he reconciled what it meant to be a teacher with the expectations that others, including his students, had of him. Bullough argued that:

*If a teacher fails to act teacherly, students will subtly press that teacher to return to the proper teacher position, to the teacher subject position made available by the specific cultural and institutional context of schooling.*

(Bullough 2005, p. 240)

Brenton felt the pressure of conformity, to act as a teacher even outside the school context. After six months of teaching, Brenton’s perception of self and the teacher appeared to remain distant from each other. While Brenton was the only participant who offered a narrative of tension created through self versus teacher, other participants identified issues of tension associated with shaping a professional identity and beginning to teach and, for this reason, a section addressing tensions follows in section 6.4.

Damien also described the duality of identity in the following re-told narrative.

‘Teaching, almost like being a schizophrenic’.

‘I am now Mr S. and Damien. There is an absolute difference for me. It’s like a demeanour. It’s funny when I am at the shops on the weekend and I run into kids, you quickly jolt back into the Mr S role. I walk down the street holding my six-month-old daughter. It’s like a clash between school and my private life when I see students out of school’.

‘On the weekend, I am myself, relaxed and when you see kids you know it’s like you are back on yard duty. There is a sense of responsibility, a sense of duty. I think that’s what it’s
linked too. I think the way I conduct myself with students is the same in and out of school. I consider myself to be quite personable and easy to get on with’.

‘I am finding less distinction between Mr S and Damien with my music students. These are Year 11 and 12 students and a few Year 10s. We hang out at music events and you are packing up equipment together. The relationship is less formal. These kids call me Damien and that’s fine. The difference is that there is no behaviour stuff with these students. I don’t have to be Mr S. So, perhaps the professional identity thing for me is linked to authority’.

(Damien, Interview 2)

While Damien identified a difference in his identities, it did not appear to present a tension. Damien was able to successfully build bridges (Alsup 2006) between the two identities and, in so doing, he could reflect on the reason why he, at times, assumed a well-defined teacher persona. That reason was linked to his belief that, at times, he needed to be stricter, particularly when working with students in Years 8 and 9.

In Chapter 5, the internal struggle between two identities, that of parent and that of teacher, were highlighted for Dianna. For Dianna, the primary caregiver of her young child, juggling the demands of work and home were initially an issue. After six months of teaching, this tension appeared to have diminished, a result of growing self-confidence and acceptance by staff and students. In the second interview, Dianna revealed that she would now set herself short-term professional goals: she would ‘take small steps’ and say to herself, ‘how do I get over this next hurdle’? Dianna was the only participant who identified tension between the demands of her teaching role and that of being a parent. It appeared that the issue of gender and the identified nurturing responsibilities of being a single parent and mother were at play here.

However, for the majority of participants, the difference between personal and professional identity was limited to physical aspects such as changing dress standards and the language used when at school. For example, Neil stated:

‘When I am at school I am the teacher and that dictates who I am when I am at school. The way I speak and dress. I know I am a role model at school. There is no big difference in who I am at school and outside school really. I might wear a shirt at school and a T-shirt out of school but basically I am the same person’.

(Neil, interview 2)
In the literature review, the concept of identity is underpinned by the belief that one has multiple selves and that one’s identity is shaped and developed through social interaction with both the familiar and unfamiliar. As Bullough argues: *the subject positions we occupy and play out define for our colleagues models of professional being and provide conditions of membership* (Bullough 2005, p. 239). The result is that beginning teachers may feel that they need to act and react differently to meet the conditions of membership within professional situations and this was clearly evident through Brenton and Damien’s narratives. For Neil and for the majority of participants, the conditions of membership were manifested through the language they used and the dress code they adopted for the role of teacher.

While the investment of the personal (Nias 1989) created varying degrees of tension for two participants in this study (Brenton and Dianna), for the majority of participants, there appeared to be a seamless transition between their personal and professional identities, as Jason stated: ‘Who I am as me is intertwined with me as a teacher’ (Jason, e-journal, entry 6).

The section that follows continues the collective account of the first six months of teaching and identifies the aspects of transitioning that continued to present opportunities for affirmation, challenge and tension for participants.

6.4 Continuing the transition – Affirmation, challenge and tension

After six months, the majority of participants in this study evidenced a capacity to negotiate a professional identity and to begin to consolidate a personal knowledge of self as teacher (Wenger 1998; Connelly & Clandinin 1999; Sachs 2001, 2005). However, participants continued to be confronted with ongoing and new challenges and tensions associated with beginning to teach. The ongoing challenges and tensions continued to be focused primarily on realising and acknowledging the complexity and diversity of the teaching role.

The narratives of participants highlighted the point that the aspects that continued to challenge the beliefs they had developed about their emerging professional identity were those associated with the unforeseen diversity of their role, particularly those aspects and roles that emerged as they taught for longer periods of time. These roles
were indirectly associated with classroom teaching such as teacher as counsellor, teacher as administrator, and more generally ‘just knowing how the school systems run’ (Peter, interview 2). Brenton’s narrative elaborates the point:

‘I don’t like the administrative work at all: in fact, I hate it! That’s what gets me down: I could happily just teach. Parent–teacher interviews, detentions and the follow-up crap, enrolments, it’s the paperwork! It’s all of these smaller jobs that you do but it makes teaching such a huge job. Kids come down to my teaching area during lunch, and even after school. I would rather stay here and work with them if they are happy. That’s what people just don’t understand about teaching: it is more than being in the classroom from 9-3’.

(Brenton, interview 2)

Similarly, Damien stated that:

‘… the variety of tasks, other than teaching, that go with the job. There are so many things that you don’t see when you are on prac like how to organise a school camp or an ensemble tour of five local primary schools. Being practical subjects (D&T and Music) there are lots of behind-the-scenes responsibilities in regard to preparation of materials and equipment and safety. The workload, keeping up with everything and learning the ways of the school continue to cause me a degree of tension’.

(Damien, interview 2)

And Dianna stated that,

‘Time management is an issue for me, getting the balance right: there is so much to do both in the class and outside. I worry about how to do it all and not take too much home’.

(Dianna, interview 2)

Several participants stated that they looked forward to completing a full year of teaching to reduce the number of ‘unexpected surprises’ (Peter, interview 2). Peter’s narrative is reflective of the sentiments expressed by the majority of participants when he stated:

‘As a beginning teacher you always go “was I meant to do that as well, no one told me that”. I am looking forward to having the first year finished and being
able to say “OK, I have now seen how a whole year runs”. Then I can say “Now I know what I need to do, no more unexpected surprises”. But I know it is never going to be easy really and I don’t want to be the kind of teacher who sits back and says I am going to do nothing. I don’t expect it to get easier but I expect to learn how the school systems run. The learning curve won’t be quite so steep but there will always be something new to learn’.

(Peter, interview 2)

It appeared that a number of participants felt it would take at least one year of the school cycle (Pietsch & Williamson 2010) to develop a basic understanding of how schools operate.

While the diversity and complexity of workload, time management and administrative responsibilities continued to present ongoing challenges for the majority of participants, the development of professional relationships with students appeared to have been easier than initially predicted. After six months of teaching, there was also a growing realisation that developing good relationships with students was the key to effective classroom management. This was evidenced by Dianna who stated:

‘Initially, I was really hesitant about my relationship with students but I am finding that that it is much easier than I thought it would be. It was a slow and very anxious process at the beginning of the year but once we started building up those relationships it was OK. Classroom management issues have really decreased as a result’.

(Dianna, interview 2)

Similarly Damien stated:

‘The opportunity to build relationships with students has continued to develop. It (full-time teaching) is so different to practicums which are normally finishing when you develop good relationships with students. At this school, it can take some time for students to ‘come around’ or ‘let you in’. With some students, it took months, others a matter of weeks. So it has been great to stay in one setting for a period of time to see relationships develop’.

(Damien, interview 2)

And Neil:
Forming strong student–teacher relationships especially with those students who seem to struggle with school has been easier as the year has progressed. This had the biggest impact on my professional identity. I mean here, finding the best medium between being a friendly and approachable teacher who students can relate to and someone who is the conductor of the class and responsible for their safety and education. I find knowing your students and setting strong boundaries and continual encouragement works the best’.

(Neil, interview 2)

For other participants, such as Jason, maintaining the boundary between teacher and friend continued to cause a degree of tension. Jason elaborated on the dilemma that confronted him:

‘I know that the students influence my perception of my identity. They perceive me as a young and up-and-coming teacher so they feel they can speak freely to me and they say they find approaching me, if they need to, is easy. They can talk to me like a mentor rather than just a teacher. Strangely enough, a lot of the students have been confiding in me and the counsellor has approached me and asked me if I wanted to take on the counsellor job. However, this is also one of the challenges, one of the hard things I have found, is trying to find the barrier between “I am not a friend, I am your teacher”.

(Jason, interview 2)

For Travis, the freedom and independence that came with teaching his own class was identified as an affirmation. Locating a sense of self within his teaching after six months enabled Travis to take more ownership and to learn from his mistakes. Travis further suggested that he found teaching his own class to be easier than teaching during his professional experiences. Travis stated:

‘It is good to be able to do your own thing, to make mistakes and not have a mentor teacher looking over at me. To be able to try out new behaviour methods without fear that this is going to go on my prac report has been fantastic’.

(Travis, interview 2)

The data revealed that the challenges and tensions faced by participants after six months of teaching were not associated with the need to further develop subject
content or pedagogical content knowledge. As indicated in the previous chapter, the majority of participants appeared to have commenced teaching with a high degree of confidence in this aspect of their teaching. Participants’ initial confidence continued to be reinforced after six months of teaching through positive recognition and acceptance by colleagues and students. This can be seen in the responses by Peter and Damien. Peter stated:

‘People are saying I am doing a good job, and as a result I feel really good about my teaching: in fact, I now shape my identity rather than shaping it to meet the expectations of others. It is really about an internal critique and reflection of what I do rather than what someone else is thinking about what I do’.

(Peter, interview 2)

And Damien stated:

‘You would not believe what a small thing like receiving a birthday card from your principal can mean. He congratulated me for being such a great teacher and making such a valuable contribution to the school. It made my day and made me feel so good about myself’.

(Damien, interview 2)

For Peter and Damien, the social network and support of their schools served to reinforce and enable them to self-critique and take personal ownership of identity formation (Bullough 2005). That is, they, like the majority of participants in this study, did not appear to be severely limited or constrained by the school culture as to who they became as beginning teachers. No participant appeared to be marginalised by their school context in any way after six months of teaching. In several instances, participants’ extensive understanding of the content and implementation of the Design and Technology curriculum (SACSA) was drawn upon to inform teaching programs and shape the practice of colleagues.

6.5 Final summary

This chapter has offered a collective account of participants’ first six months of teaching and has presented a range of re-told narratives that reflected a growing sense of confidence as the majority of participants found the opportunity to integrate
aspects of their personal identity into their teaching persona. What differentiated this study from those outlined in the literature review was that changes to professional identity for the majority of participants did not appear to be overwhelming or confronting. The tensions usually identified with beginning to teach (see e.g. Coldron & Smith 1999; Bullough 2005; Pillen et al. 2012) were not apparent. When comparisons are made to Pillen et al.’s list of 13 identified tensions as outlined in Chapter 2, only four of the tensions were identified by a small number of participants. These tensions arose through: participants wanting to invest more time in practising teaching versus feeling pressured to invest time in other tasks which were part of the role of teaching professional, for example, administrative roles and responsibilities; feeling like a student versus being expected to act like an adult, a tension clearly articulated through Brenton’s narrative; similarly for Dianna, being a mother versus being a teacher also created tension; and the final tension for several participants was wanting to care for students versus being expected to be tough.

As Wenger (1998) argued, the reconciliation of the different practices associated with multiple identity trajectories can be a difficult process as one crosses the boundaries of one community into another (Clandinin 2007). While the investment of the personal (Nias 1989) created varying degrees of tension for the identified participants, for the majority, there appeared to be a seamless transition between personal and professional identities.

While participants initially appeared to assume the beliefs and practices of the dominant school culture (e.g. teaching set programs and projects), as the year progressed, that is, after six months, there appeared to be increased opportunity for introducing new ideas, for individual reflection and critiquing the status quo. Peter’s narrative captured the transition that occurred for him from fulfilling the identity expectations of others to fulfilling the expectations he had of himself:

‘Originally it was the weight of the worrying about the expectations of others that was the biggest thing to shape my identity. This has only changed this term. I have got to the point now where my biggest thing is my expectation of myself and the critique of myself’.

(Peter, interview 2)
Participants found that over time they were increasingly able to actively pursue the professional goals that they valued (Day et al. 2006). As demonstrated by Jason’s narrative:

‘The teachers I work with are willing to accept my ideas and the direction I want to be going with my teaching. I have a say over what I do and how I want to do it’.

(Jason, interview 2).

This finding was in contrast to those reflected in the review of the literature (see e.g. Furlong & Maynard 1995; Berliner 2001; Feiman-Nemser 2001; Fetherston 2006; Pietsch & Williamson 2010) where the first year of teaching was predominantly characterised as a novice stage. Beginning teachers in these referenced studies were overwhelmed by the need to navigate the somewhat rough waters and dangerous shoals of beginning to teach (Pietsch & Williamson 2010, p. 331). In so doing, opportunities to exercise independence in shaping and maintaining their sense of self identity appeared to be minimal. Participants in this study found that they had a voice in determining how they were identified by others and how they identified themselves. They were becoming the teachers they wanted to be and, in so doing, they increasingly looked inward to construct themselves. It became evident that, when self-efficacy was engendered by both success in the classroom and acceptance within the school community, the opportunities to shape participants’ own professional identity were strengthened.

The study identified that, as the school year progressed, participants became increasingly familiar with the knowledge associated with the structure and administrative culture of schools, that is, with the daily routines and expectations; however, the unpredictable (and, in some cases, unknown) nature of this aspect continued to create a degree of tension. The majority of participants looked forward to experiencing a full year of teaching and to being able to say: ‘OK, I have now seen how a whole year runs’ (Peter, interview 2). It appeared that the majority of participants were not prepared for the complexity and diversity of the teaching role, particularly those aspects related to administrative responsibilities, for example, report writing, detention paperwork and parent–teacher interviews. While the
diversity of workload, time management and administrative responsibilities continued
to present ongoing challenges for the majority of participants, the development of
professional relationships with students appeared to have been easier than most
participants had initially predicted.

Several participants made reference to the limitations of professional experience in
supporting the development of successful and meaningful professional relationships
with students. Teaching for an extended period of time had enabled classroom
management issues to be addressed and parameters to be developed for effective
teaching practice. After six months of teaching, the general consensus from
participants about their teaching was summarised in Jason’s comment:

‘I am feeling a lot more confident, I feel happier in my teaching and not so
nervous’.

(Jason, interview 2)

The chapter that follows offers a consolidated, collective account of the first year of
teaching. Participants’ initial perceptions and beliefs regarding the influences that
were predicted to shape professional identity in Stage 1 of the study are revisited and
compared to the realities of the first year of teaching and with existing research.
Chapter 7
Narratives of Reflection and Comparison

7.1 Introduction
This chapter draws on the responses of participants to the questions posed in the final interview held at the end of Term 4 and in their e-journal entries to offer a consolidated, collective account of the first year of teaching. In this, the final analysis chapter, participants’ initial perceptions and beliefs regarding the influences that were predicted to shape professional identity in Stage 1 of the study are revisited and compared to the realities of the first year of teaching and with existing research.

As predicted by participants during Stage 1 of the study, school-based experiences and the interactions with colleagues and students were identified as being instrumental in shaping the professional identity of participants. The positive responses of significant others, coupled with a validation of participants’ teaching practice, served to affirm participants’ emerging professional identities and, in so doing, facilitated acceptance into a professional community of practice (Wenger 1998). Additional insights into the influences that shaped beginning teachers’ professional identity including tenure of employment and the nature of the university program itself were provided.

Throughout the analysis of participants’ narratives, thematically coded categories emerged and these became the headings under which the findings in this, the final analysis chapter, are discussed. The identified headings are:

- Building Identity Bridges;
- Validation of Professional Knowledge
- Negotiating Sites of Tension.

The chapter concludes by identifying participants’ future teaching aspirations.
7.2 Influences that shaped beginning teachers’ professional identity

Analysis of the data from the in-university phase of this study, as presented in Chapter 4, indicated that identity was not viewed by participants as being something that was fixed. Identity was perceived to be dynamic, and ever changing. After a year of teaching, this belief continued to be held by all participants. This was evidenced by Aaron and Dianna, with Aaron’s response that:

‘I would say I am still working towards the sort of teacher I want to be. I am still a learner; my identity as a teacher is still evolving. You learn every day in school and you learn from your experiences’.

(Aaron, final e-journal entry)

Dianna responded that:

‘I feel that I am getting there, but there is still work to do. I am still trying to get that balance between authority and friendship with students. In this area, I am not exactly the teacher I want to be just yet. Initially, I was really worried about the expectations of the Design and Technology teachers that I would be working with. I haven’t had to worry about this as the other staff in Design and Technology have been so supportive’.

(Dianna, final interview)

Before they commenced teaching, participants predicted that the most significant influence in shaping their professional identities would be associated with school-based experiences and interactions with others. Participants’ responses acknowledged that the context in which they commenced teaching would facilitate an ongoing process of identification: a process of interpreting (and reinterpreting) oneself as a certain kind of person (Gee 2001, cited in Beijaard et al. 2004, p. 108). The data, at that time, further revealed that participants believed the development of relationships with colleagues and students, or lack thereof, would become the basis for that interpretation and reinterpretation of how one viewed oneself as a teacher.

Participants identified that it would be the dialogue and responses of others coupled with an acceptance of their teaching practice that would serve to affirm their professional identities. However, before they commenced teaching, there was a
degree of apprehension in how participants felt they would be supported and their practice affirmed within the school context. This was evidenced by Damien as he reflected back on his first year of teaching:

‘For me when I first started teaching it [was] just a matter of how was I going to fit what I did and what I believed about teaching Design and Technology into the current environment. Now, those differences in how I believe Design and Technology should be taught have not changed but my initial concerns about would I fit with what was happening in the school were unfounded. I know that in some schools, there would be differences in the way I would teach Design and Technology but here in my school I can do my own thing all the time. I have been able to do the projects that students have wanted to do. The process we work with is design focused on solutions to problems. That has been really good. I have been able to teach the way I want to teach’.

(Damien, final interview)

The data revealed that participants’ original fears of being subjected to the powerful socialising forces of the school culture (Flores & Day 2006, p. 221) were unfounded. While this appeared to be the case in several of the studies examined in the literature review (see e.g. Lacey 1977; Pugach 1992; Stuart & Thurlow 2000), it was not the case for participants in this study. After one year of teaching, all participants, albeit to varying degrees, continued to feel supported by their colleagues and students. Participants were encouraged to undertake new ways of teaching and to introduce new ideas and projects. The degree of freedom and ability to teach in ways that they wanted to was greater than participants had originally anticipated. As Evan stated:

‘I have been amazed at the freedom and independence I have had in my first year of teaching. It is good to be able to do your own thing. What I do now, what I teach and how I teach has opened my eyes and given me a whole range of opportunities for what I can do in the future’.

(Evan, final interview)

Surrounding beginning teachers with a professional culture that supported their personal and professional growth and well-being appeared to be, as predicted, the most significant factor in shaping professional identity throughout the first year of teaching. As a result of positive and supportive interactions with many staff and not only their mentors, participants were provided with the opportunity to develop and
continually shape who they became, that is, their professional identity. The collaborative school cultures as identified by Hargreaves (1994) were identifiable in the school settings of the majority of participants, thus enabling the development of professional relationships that were voluntary, evolutionary and development-orientated in nature. It is these types of relationships, according to Hargreaves (1994), that are the most effective in supporting professional growth and development. Peter’s comments were representative of those by the majority of participants when discussing their interactions with members of staff:

‘What continues to shape my professional identity are the interactions with staff and students. This continues to build my self-confidence, for example, when staff give you praise or encouraging comments for the work you have done. There have been a lot of teachers who have done that this year so that I now feel accepted and welcomed into the community. The kids come up and say “hello” and chat to you in the yard’.

(Peter, final interview)

The data revealed that the first year of teaching provided a lived experience of participation within specific communities (Wenger 1998). Engagement with members of that community, acquiring increasing competence in it, taking on some of the perspectives and aligning oneself within that community served to positively shape the professional identity of participants. After a year of teaching, it became very clear that, through interacting positively with colleagues in the Design and Technology faculty and with students, participants became identified with and identified as being someone who was accepted within their school community. This discussion has drawn on earlier references to the work of Wenger (1998) and his examination of communities of practice to emphasise the close connection between participants’ professional identity formation, the relational nature of identity, acceptance by colleagues and the development of supportive professional relationships. Wenger (1998) defined identity formation as a dual process involving both identification and negotiability within a community of practice. The findings of this study have concurred with Wenger's view in that it was through identification that beginning teachers were able to create connections with colleagues in schools and, in so doing, they became both identified with the school community and identified as being someone who was accepted within that community.
These connections appeared to strengthen and reinforce participants’ belief in their abilities as teachers. They served to motivate them to continue moving forward in their teaching and in shaping their professional identity. The first year of teaching for participants in this study was a time of constructive learning not just of merely coping (Feiman-Nemser 2003).

The loss of idealism identified in Feiman-Nemser’s (2003) study of beginning teachers was not the case for participants in this study: in fact, idealism appeared to be strengthened and possibilities for the future were envisaged and enabled. This was evidenced by Evan when he stated:

‘My confidence has really grown over the last year. This is due to the people I work with, leadership, colleagues, through exploring what I can teach in Design and Technology, taking it further and doing bigger and greater things. The support of my colleagues and leadership has been really vital’.

(Evan, final interview)

The growing confidence that initially appeared to be fuelled by the positive responses and feedback of colleagues and students continued to be reinforced throughout the year through self-critique. It was clear from this study that the first year of teaching entailed a continuing process of reflection as well as an analysis of one’s beliefs and teaching practices. For example, at the beginning of the year, Brenton had stated that he was nervous but excited about commencing teaching. At the end of the year, he revealed:

‘I feel a lot better about myself and my teaching, particularly since the start of second semester (halfway through the year): this is because you have new kids coming through and you can teach the units of work again with changes to improve them. You know what you have to teach this second time round, you know what to expect from the kids, you can reflect back on what you have taught before and you feel better prepared and more confident’.

(Brenton, final interview)

The data revealed that initially professional identity was primarily shaped by how participants believed they needed to be perceived by others. However, it was within a relatively short period, when compared to other identity studies (see e.g. Feiman-
Nemser 2003; Flores & Day 2006) that participants assumed greater responsibility for shaping their own professional identity through reflection and self-critique. This was evidenced by Neil whose final interview provided a clear timeline for identity transition and development:

‘When I first started teaching, planning was the big emphasis; I wanted to get it right so others could see I knew what I was doing. I also made mistakes but I learnt a lot from that. In the beginning, it was just a big learning curve. By the middle of the year, I found a style that I was feeling more comfortable with, I taught in ways that suited me. I was feeling more settled. By the fourth term, I was beginning to refine the way I taught, I spent more time self-reflecting and looked for ways to continue to improve’.

(Neil, final interview)

This was also evidenced by Isaac who stated:

‘I am continuing to shape my professional identity, and I continue to believe that, to an extent, I am responsible for shaping my identity but I also realise that outside influences or influences beyond my control continue to have an impact. For instance, limited access to resources can shape what you can do and how you can do it. My identity is also linked to my level of competency and as I teach more and attend more PD [professional development], such as the Cert 4 training in workplace assessment and Pro/ENGINEER, I feel more confident. Other teachers, especially those you work with, really start to see you as being professional, bringing new ideas and trying new ways of teaching. This shapes how you are viewed by others in a positive way’.

(Isaac, final interview)

Furthermore, through the development of a positive professional identity, participants were able to demonstrate confidence which manifested in an ongoing commitment to teaching. They appeared motivated, enthused and dedicated to making a difference. This was evidenced by Damien and Travis with Damien noting that:

‘I am continually driven by wanting students to leave the classroom with what they need, that you have prepared them for the future as best you could’.

(Damien, final interview)

And Travis noted:
'I definitely feel like a teacher. I am the teacher I want to be: for me, the transition into teacher hasn’t been defined by any specific points. It’s been a gradual sort of transition. Teaching has been everything I was hoping it would be. I can’t stress enough how good [it is] to be at this school. I am feeling supported and am continuing to grow in confidence’.

(Travis, final interview)

7.3 Building identity bridges

For the majority of participants, there was a great deal of personal and professional satisfaction in who they had become as teachers. However, for Brenton and Damien, reaching this level of satisfaction took longer. It appeared to take time to build bridges (Alsup 2006) between self-identity and their professional or situated identity. As was evidenced in Chapter 6, it took time for Brenton and Damien to feel comfortable and not threatened with the identities they now needed to assume as teachers and with the responsibilities that were associated with these identities. Brenton reiterated the tension that beginning to teach had presented for him:

‘I think for me there was initially a big difference in me as Brenton outside teaching and me as Brenton the teacher. That has changed over time. I can still be myself to some extent as I have become more confident but I have still found, even after a year, there are some compromises. Not enough to make me not want to teach. I am on my way to being the teacher I want to be, so I am not worried that I am down spiralling into something I don’t want to be: if that was the case, I would resign’.

(Brenton, final interview)

When analysing the data, it became evident that, as predicted by participants, their teaching identities continued to be mediated through past experiences. Many of the life and work experiences identified in Chapter 4 as predicted influences in shaping professional identity continued to be enduring influences after one year of teaching. For instance, Peter, as the father of teenage children, stated:

‘My life experiences still shape who I am and my teaching. My own children, my daughter who is aged 15, the same age of the students I am teaching. I still think about what I want for my own children, the society I want them to live in. I work towards that in my teaching’.

(Peter, final interview)
Peter elaborated:

‘As a father and teacher, I probably feel more empathy than I thought I would for students. I have students who are real strugglers. When you are [at] uni, you just don’t realise the sorts of issues you are going to come up against, for instance, the homelessness, drugs and violence that are part of these students’ lives. There are times when I have gone home and said “Oh my goodness!” My wife says “what’s wrong?” and I say “... this girl in my class ...”. It is good to be able to talk it through at home’.

(Peter, final interview)

And Isaac added:

‘I have certainly become more experienced as the year has progressed. I continue to perceive my professional identity to be closely aligned to who I am and to what I have done previously in life, before I started teaching’.

(Isaac, final interview)

Having been a designer and maker of prosthetics, Isaac commenced university with considerable experience outside a school environment and he believed this had enabled him:

‘... to look at things in a different light. I think this has been beneficial to me as a Design and Technology teacher because I have told students what I used to do for work so that they know that when I tell them something about work it is from firsthand experience’.

(Isaac, final interview)

The findings from the final stage revealed that participants continued to combine experiences and elements of their past with aspects of the present to shape who they were as teachers. The findings concurred with research (see e.g. Kelchtermans 1993; Coldron & Smith 1999) that suggested beginning teachers’ historical and biographical influences continue to shape identities once in-service teaching commenced. For participants in this study, this was clearly the case.
7.4 Validation of professional knowledge

Beijaard et al. (2000) stated that teachers derive their professional identity from both the subject matter they teach and their pedagogy. Staples (2003) further argued that this is particularly evident in the field of Design and Technology education, where many teachers directly associate their professional identities with the curriculum they deliver. In these analysis chapters, this view was further strengthened.

The past histories of participants clearly influenced the creation of their professional identities which subsequently influenced their practice. Past histories had facilitated the development of subject content knowledge, specific skills and an understanding of safety in the workplace. Participants with experience in a related Design and Technology field believed they had been provided with an additional level of confidence and competence in developing their subject knowledge as they transitioned into the teaching role. For example, Damien stated:

‘I came to teaching with a strong design background. I have been able to draw on this to come up with new units of work, for example, the jewellery design brief I came up with. It was a matter of trial and error in finding something new to replace the candelabra metal task that the Year 10s usually do’.

(Damien, final interview)

The prediction by participants that recent changes to subject content knowledge, initiated through curriculum change and advancing technologies, would provide an opportunity for them to open up the learning area to new ideas and pedagogies had become a reality. As the year progressed, participants embraced the opportunity to introduce new units of work and new technologies and to make their teaching more student-centred. For example, Jason stated:

‘As I have been teaching longer, I have tried to put more design in there. It has made teaching a bit harder as I try to work with students individually rather than just say “OK, we all do this step next”. This is how it has been done in the past. I now say “OK, I am going to show this student how to do this part of their project. If you think you might need to know this, come and have a look”. I still want to improve the kids’ skills but I also want them to think better, more creatively and to think for themselves’.

(Jason, final interview)
Travis also stated that:

‘I plan to continue to push new ideas. I would like to become part of the state championships in say the CO2 dragsters or solar boats. I would like to take the kids overseas to compete at that level. I want to give Design and Technology a profile in the school and give the school a profile too’.

(Travis, final interview)

The literature review (see e.g. Paechter & Head 1996) explored the marginal nature of Design and Technology in schools. Direct questioning in regard to this issue was not initiated by the researcher; however, the data from this study revealed that issues of subject marginality were also not raised by participants. While Travis’s comments indicated that he would like to raise the profile of Design and Technology in his school, his comments did not directly indicate that the subject was not currently valued by colleagues, students and the wider school community. The public profile of Design and Technology in the majority of schools in which participants were teaching appeared to be positive and was highlighted through involvement in international and national events such as Pedal Prix, Formula One racing and CO2 racing. Involvement in these events would have required a commitment by the school in terms of resources and finance.

7.5 Negotiating sites of tension

The final narratives of participants indicated that some aspects of the learning agenda (Feiman-Nemser 2003) that had confronted them when they commenced teaching could not be prepared for or introduced with relevance outside the specific school context. It was these aspects that initially provided sites of tension and uncertainty for participants. For instance, for Peter and Jason, this tension was created when teaching subject content that was not part of their university study. In reflection, Jason stated:

‘As the year went on, things started to get easier, you understand the routines. The kids know your expectations. I also got more support from the staff as the year went on, particularly when teaching religion. You develop better relationships. My unofficial mentor returned after taking leave for illness. I still see myself as a beginning teacher. I am young and, at times, somewhat naive. After a year, I am still trying to sort through what works for me and what works for this type of school (Catholic, all boys). I know I have built up
my confidence particularly with parents and in my teaching. This confidence has come from proving to myself that what I do is alright and I know my ability, skills-wise, is up to scratch’.

(Jason, final interview)

A site of tension for Dianna was created through the competing demands of learning to teach coupled with the demands of family life. These demands were reflected in Dianna’s earlier e-journal entries when she stated: ‘[t]here is so much to do, when to do it and I try not to take too much home’ (e-journal, entry 2). The internal struggle between the two identities that she now assumed; that of parent and that of teacher, and, more specifically, the related issue of time management continued for much of the year. In the second interview, Dianna stated: ‘I know I still need to get the balance right, there is still so much to do. I take small steps’. While the final interview revealed that Dianna appeared more confident in her ability to manage the dual roles, she still stated that:

‘My professional identity, how I see myself as a teacher fluctuates. It is very closely linked to my general well-being and my energy levels. My confidence gets the occasional boost when I see something that makes me think I am doing something well’.

As the year progressed, Dianna’s teaching load became more heavily weighted to the area of information and communications technology (ICT). Dianna identified computing as an area of her subject content knowledge expertise. As a consequence, her levels of work preparation became reduced and more flexible with opportunities to plan for her teaching at home and at a time (mostly evenings) that suited Dianna and her family commitments.

Each participant’s learning agenda (Feiman-Nemser 2006) appeared to be bound up with a personal quest to develop an acceptable professional identity, an identity with which colleagues, students, parents and, more importantly, which they, the participants, could comfortably (Fetherston 1993). For instance, Neil stated:

‘I still see myself as a learning teacher. I still feel the pressure from myself. I feel there is a lot that I need to get right. I am really happy with how I have come along over the year and I can really see my achievements through the
achievements of my kids, ‘the proof is in the pudding’. I feel really supported in what I do. There is always help if I need it, I do feel like I am part of a team. I am really happy in this role’.

(Neil, final interview)

In Chapter 4, Neil had predicted that his entry into the program as a mature-aged student with a trade background could present him with additional pressures. Neil’s concern at the time was that his colleagues and students would have higher expectations of his teaching ability. However, after a year of teaching, he realised that such pressures did not eventuate:

‘There has been no pressure. I can teach how I like. I sometimes ask advice on behaviour management issues but the content and how I teach have been my own. My approach is very design-based and that sits well with this school. I continue to take ownership and pride in what I do’.

(Neil, final interview)

The connections between participants’ pasts and the immediate created a degree of continuity between different identity trajectories within what Wenger termed the *nexus of membership* (1998, p. 160). However, Wenger warned that reconciliation of the different practices associated with multiple trajectories can be a difficult process as one crosses the boundaries of one community into another.

This was the case for Brenton and Damien and, to a lesser extent, Dianna. For Brenton and Damien, the duality of identities and the disparity between the identity of self and that of teacher initially created tension. Feelings of identity loss and compromise coupled with the pressure to conform, that is, to act as a teacher even outside the school context presented a challenge. For Dianna, dealing with the dual trajectories associated with being a single parent and with the time- and energy-consuming role of full-time teaching created time management and work balance tensions. As Wenger acknowledged, not all trajectories cohere and reinforce each other in a positive way. Sometimes trajectories clash requiring individuals to resist or reject particular identity positions. However, for the majority of participants in this study, crossing the boundaries of one community into another emerged to be a relatively seamless transition.
7.6 The impact of employment tenure on professional identity formation

Seven of the case study participants had stable, secure and continuing employment at the commencement of this study. Two participants were offered permanent positions midway through their first year of teaching and one after the completion of a full year. In the light of Pietsch and Williamson’s (2010) study, introduced in the literature review, the permanent nature of employment tenure for participants appeared to have a significant and positive impact on enabling them to continue to develop their professional knowledge and to shape a positive image of themselves as teachers within collegial professional communities.

When compared with the seven primary teachers in Pietsch and Williamson’s (2010) study, participants in this current study were beginning teachers in a field of high demand. The demand for secondary Design and Technology teachers currently exceeds the number of beginning or experienced teachers available to fill teaching positions. The outcome is that Design and Technology pre-service teachers are usually offered permanent employment immediately following graduation. A number of participants in this study had been targeted for employment in a specific school as a result of a successful professional experience in their third or fourth year of study. The result is that Design and Technology graduates are generally welcomed into schools, particularly into Design and Technology faculties which have often been understaffed or who had staff who had indicated they wanted to retire.

However, the negativity associated with limited tenure was evidenced by Jason who stated:

‘When you start in a school and don’t know how long you will be staying, it affects the effort that you put in. I know that does not sound good but it does determine your commitment in terms of what resources should I be developing; how well should I get to know staff and students; how much should I influence what is taught and how it is taught; do I just do things as they have always been done and not try to make changes?’

(Jason, final interview)
Jason was offered permanent tenure at the end of the first year of teaching. His response to this offer was one of relief: ‘[k]nowing that I am coming back here next year has also made a huge difference, it’s a big relief’ (Jason, final interview).

The findings of this study concurred with those of Pietsch and Williamson (2010) in that permanent tenure of employment for participants had a significant effect on participants’ ability to not only develop their professional knowledge but on their continuing commitment to the profession; and on their self-confidence and self-image as teachers.

7.7 The influence of the Design and Technology teacher education program

Teacher education programs provide the knowledge base from which pre-service teachers can build their understanding and identify what is relevant to teaching. Beauchamp and Thomas (2009) argued that making the connection between what is learnt in teacher education programs and what happens in schools can better prepare beginning teachers for any disjunctions or tensions that they may confront not only throughout school-based professional experiences but also once they commence teaching. Bullough and Gitlin (1995, 2001), Bullough (1997, 1999, 2005) and Beijaard et al. (2004) highlighted the importance of teacher education programs in recognising professional identity development as being a crucial aspect of the courses that are taught. As a consequence, university teacher education programs should be viewed as a pivotal resource in constructing one’s self as an educator.

Evidence from this study has suggested that this was the case. The teacher education program from which participants had recently graduated had facilitated the development of a professional knowledge base that contributed to shaping participants’ professional identities. For instance, Dianna believed that what she learnt during her studies at university continued to influence: ‘[w]hat I do and how I do it’ (final interview). Similarly, based on his knowledge of planning, Jason was able to re-shape the assessment strategies of the curriculum; ‘[i]t used to be completely machining but now we are moving to 30% theory and 70% practical. Teaching and documenting to reflect this shift is one thing I have excelled at. I think it is because I am straight from uni where we did this kind of thing’ (interview 2).
Drawing on his recently developed knowledge of curriculum, Peter was also able reshape the curriculum; ‘I am now in the process of rewriting all of the assessment in the D&T programs so they become more student- and parent-friendly, like changing the generic terms from SACSA outcomes and converting it into plain English. I have been trained recently in using SACSA and in that sort of methodology’ (interview 2).

The undergraduate program in which participants were enrolled appeared to facilitate a deep and broad understanding of subject content knowledge through offering 12 subject content specific courses. The duration of the program also afforded participants four school-based professional experiences varying in length from two to six weeks. During these times, opportunity was provided to observe the practice of school-based mentors and to further develop their own understanding and teaching practice. As a consequence, when participants commenced teaching, findings did not reveal any gaps in their Design and Technology subject content knowledge.

These findings were in contrast to those of Rutland (2001) and Atkinson (2012) who, in their extensive research into the impact of teacher education programs in preparing beginning teachers, highlighted the short length of time available to students who are completing Master’s degree and postgraduate study in which to fill the gaps in their subject content knowledge. Their research identified a misalignment between the subject content knowledge of a first degree and the diversity of what is required to teach Design and Technology in secondary school settings.

7.8 Summary of findings

This final analysis chapter has served to reinforce that it was the interplay between participants’ own beliefs, their personal histories (both work and life), the school culture and, more specifically, the support and acceptance by colleagues and students within that culture that emerged as the strongest mediating factors in shaping participants’ professional identity in this study. Participants had initially identified each of these aspects before they commenced teaching and the significance of each aspect continued to be highlighted as the study progressed. The identified influences shaped the foundations as to who participants become as beginning teachers.
Many of the studies in the literature review identified the sudden and often dramatic transition that beginning teachers had experienced when commencing teaching. According to Flores and Day (2006), learning to be an effective teacher is a long and complex process. While participants in this study acknowledged that they were continuing on their journey to be effective teachers, they also acknowledged that generally the transition process had not been as traumatic, isolating or as tension-filled as they had initially predicted. The point of difference in this study was the short duration of time that it took for participants to feel that their practice was validated and that they were recognised as equals by colleagues. Similarly, the ways in which participants’ new teaching ideas and pedagogic approaches were accepted and, in some cases, welcomed were also not predicted from existing research. Participants appeared to grow into the profession very quickly (Vonk 1989). According to Vonk, this does not usually occur until the second or third year of teaching and is identified as a time when beginning teachers can focus their attention on improving their skills and competencies. The majority of participants in this study were refining and improving their teaching skills six months after they had commenced teaching, significantly earlier than indicated in the research literature.

To a lesser degree, the teacher education program in which they were enrolled, including the professional experiences during this time, and the stability of employment tenure also served to inform and influence the kind of teacher they were becoming. After one year of teaching, many of the participants were able to identify their professional aspirations for the future. For example, Brenton who, at the time of the interview, was on a one-year, contracted position, stated:

‘I would like another year here or [to] get signed up for 10 years. I would be happy to take that on without even thinking about it. If I don’t get here and I get a school that I don’t like, I will probably go overseas.

(Brenton, final interview)

[Brenton was offered a permanent position in the school the following year which he readily accepted.]

Five years later, Brenton is still teaching in the same school and has assumed the position of acting head of the Design and Technology faculty. Such aspirations
reflected the point that participants had developed a professional identity that provided them with a sense of belonging and professional location (Weeks 1990). The beginning teachers in this study appeared to be on the path to fulfilling their full potential in becoming effective and committed educators.

In the next and final chapter, the overall findings are reviewed, the contributions of this study to theory and knowledge are outlined and, finally, suggestions for further research are provided.
Chapter 8
Conclusions

8.1 Introduction
This thesis has examined the development of professional identity. More specifically, it has identified the influences that served to shape the perceptions of professional identity of beginning Design and Technology teachers. The study within the thesis employed a qualitative, narrative, collective case study approach to capture the ways in which beginning Design and Technology teachers’ perceptions of professional identity were constructed and reconstructed as they made the transition from final-year university pre-service teachers to first-year in-service teachers. The study has examined the influences that shaped these constructions during this period and, in so doing, has identified the factors that served to support or impede these constructions.

This final chapter briefly outlines the theory that underpins the thesis. It then summarises the findings detailed in Chapters 4, 5, 6 and 7. This is followed by an overview of the findings which highlights five themes that have emerged from participants’ collective case studies as being key factors in shaping their perceptions of their professional identity as beginning Design and Technology teachers. The chapter then outlines the contributions of this study to theory and knowledge and, finally, provides suggestions for further research.

8.2 The theory in outline
The theory that has guided this study is grounded in a postmodern framework (Erikson 1968, 1989; Foucault 1990; Gee 2001) based on the belief that identity development is far from being a fixed, stable or linear process (Britzman 1991, 2003; Wenger 1998; Bullough 1999, 2005; Flores & Day 2006). While current research (Gee 2000; Soreide 2006, Watson 2006; Cohen 2008) has argued that identity can be described in terms of a sense of self, it has also argued that identity is relational, concerned with recognition of sameness and difference between ourselves and others. This study has found that it was the recognition of sameness with teaching colleagues that provided participants with a sense of professional location and identity as they commenced teaching.
The recognition of sameness was associated with the subject content knowledge, including the technical knowledge and skills that participants brought to their educational settings. The outcome of this recognition was an acceptance of participants by their more experienced colleagues which, in turn, resulted in an early validation of professional identity as they commenced teaching. Being recognised as a teacher by their colleagues and by those in positions of leadership became an essential aspect of the legitimisation of identity for participants in this study (Gee 2001). Furthermore, the changes that occurred in participants’ perceptions of their professional identity throughout the duration of the study gave further credence to the view that professional identity is not a product that one possesses but is shaped as one progresses through life and through a range of experiences (Erikson 1968).

The work of Foucault (1990) has resonated with this study. Foucault argued that identity only has meaning within a chain of relationships and further argued that there is no fixed point of reference for an identity. Foucault termed this the arts of self (Foucault 1990, p 26) as he referred to identity as a work of art where one consciously or unconsciously constructs one’s self into who one wants to be through past and current experiences, social influences and interactions. In this study, past experiences or life histories appeared to play a significant role in constructing identity and, in so doing, provided participants with a level of confidence that enabled them to more rapidly move beyond the survival stage associated with the first year of teaching than the literature had indicated (see e.g. Furlong & Maynard 1995; Berliner 2001; Feiman-Nemser 2001; Fetherston 2006; Pietsch &Williamson 2010; Furlong 2013). As identified earlier, this emerging professional confidence appeared to be based on participants’ belief that the knowledge, skills and dispositions gained from previous work and life experiences transposed readily into the new trajectories (Wenger 1998) associated with their teaching role.

The close connection between identity, interaction and practice was also articulated by Wenger (1998) in his examination of communities of practice. Wenger argued that identity is produced as a lived experience of participation within specific communities, through engagement with members of that community, acquiring competence in it, taking on the perspectives and aligning oneself with it. Wenger (1998) further argued that, as one goes through experiences and interaction with
others, identities form trajectories. This study identified that as participants commenced teaching, they merged personal and professional boundaries as they left one community, the university, to join another, that is, the schools in which they commenced teaching. In so doing, they began to see the world and themselves in new ways (Wenger 1998)

The paradigms (Lincoln & Guba 2000) and world views (Creswell 2007, 2009) that guided this research are based on the theories of social constructivism (Lincoln & Guba 2000; Neuman 2000). Within those theories, participants in this study were viewed as seeking to understand the world in which they work and the individually constructed meanings which they made were seen to be subjective. That is, they were related to individual experiences in a particular context and formed through a process of interaction with others as well as through the historical and social norms that operate in one’s life (Creswell 2007, p. 8).

In exploring how a group of 20 pre-service teachers (in-university stage) and 10 in-service teachers (in-school stage) engaged with the processes of becoming a teacher and beginning to teach, this study has revealed insights and raised influential issues currently faced by beginning teachers. Through establishing relationships between the findings of this study and the theoretical perspectives presented in the literature, an attempt has been made to further extend these insights.

**8.3 The research questions**

The study examined the ways in which beginning Design and Technology teachers constructed and reconstructed their perceptions of professional identity as they made the transition from final-year university pre-service teachers to first-year in-service teachers. It also examined the factors that influenced this transition. This research addressed the following research questions:

1. What are the perceptions of professional identity for beginning Design and Technology teachers as they leave university?
2. What are the factors that have shaped professional identity to this point?
3. Does this identity change throughout the first year of teaching?
4. If so, what are the influences that cause this change throughout this time?
8.4 Summary of findings

This section briefly summarises the findings of this study as presented in Chapters 4, 5, 6 and 7. The summarised findings are presented in three parts with the first part drawing on the findings of the in-university stage, as presented in Chapter 4, to address research questions 1 and 2. The second part draws on the findings of the in-school stage, as presented in Chapters 5, 6 and 7, to address research questions 3 and 4. What follows is a summary of the findings of the research from the in-university stage of the study.

The following three key findings were revealed by the examination of the perceptions of professional identity of beginning Design and Technology teachers at the point when they left university:

1. A unanimous awareness amongst participants that identity formation was a continuous process and that the process for them was in its infancy. Participants could not provide a complete image of self as teacher.

2. Perceptions of professional identity were primarily expressed through the functional roles associated with a depth of subject content knowledge and technical skill level specific to the teaching of Design and Technology education.

3. Professional identity was shaped by an internalised image of the kind of teacher participants hoped to become. This image was often informed by a past, well-liked teacher or by a parent who was a teacher.

Four key factors that participants believed had shaped their professional identity before they commenced teaching were identified:

1. Past work experiences in fields directly related to Design and Technology education, for example, cabinet making, textile designing and mechanical work.

2. Life experiences, for example, being a parent and/or having personal interests that were related to aspects associated with teaching Design and Technology
education, for instance, working with wood or textiles, cooking, building, restoring cars or furniture.

3. University study, that is, the role of the university program itself, including the content of courses and the support and role modelling provided by tutors. Professional (school-based) experiences were highlighted as the most significant contributing factor in shaping professional identity within the university program.

4. The influence of family or friends who were teachers.

What follows is a summary of the analysis of the research questions posed in Stage 2, the in-school stage of the study, as presented in Chapters 5, 6 and 7. The analysis for this stage of the study focused on the narratives of the 10 participants in order to provide insights into the processes involved in the construction of professional identity.

The study revealed that the majority of participants:

1. Commenced teaching with a level of confidence and this increased as the year progressed.
2. Were able to take ownership/responsibility in shaping their professional identity earlier than indicated by the literature (e.g. Watson 2006; Smith 2007).
3. Had a voice in shaping their professional identity.
4. Were not constrained to the situated identity associated with teaching in their field.
5. Felt minimal disjuncture between their personal and professional identity (with only one notable exception).

After a relatively brief period of uncertainty and self-doubt, as evidenced in the first six weeks of teaching and as presented in Chapter 5, the process of transition appeared to be relatively seamless. There appeared to be a strong coherence between participants’ personal and professional identities. A number of positive influences contributed to this coherence and the resultant relatively smooth transition. The influences identified by the study were:
1. The support, collegiality and leadership provided by mentors and colleagues to participants throughout the transition into teaching as well as their acceptance and valuing of the knowledge, skills and beliefs with which participants had commenced teaching.

2. Provision of opportunities to implement new ideas and teach in different ways.

3. Permanent tenure of employment thus enabling a long-term investment in the development of professional identity.

Conversely, influences, identified in this study, within these contexts that had negative impact on shaping professional identity, particularly in the early stages of beginning to teach, were:

1. Limited support, collegiality and leadership offered by colleagues.
2. Teaching subjects that were not part of participants’ university study.
3. The wide range of administrative responsibilities that participants needed to assume but for which they felt unprepared.
4. The diversity and complexity of the teaching role, including finding the boundaries between being a friend and a teacher, being a counsellor, a social worker and being expected to assume a number of extra-curricular responsibilities.

The chapter thus far has provided a brief summary of the research findings with specific reference to the research questions. The following sections summarise the five major themes that emerged from participants’ re-told narratives as being key factors in shaping their beginning Design and Technology teachers’ professional identity.

1. The Past Shapes the Future – Personal and Professional Histories

The research findings revealed that identity formation for participants of this study was shaped by multiple influences or trajectories (Wenger 1998). These influences included experiences from their past, for example, as school and university students, as parents and from past career trajectories. For instance, participants who had a trade qualification or who were parents used threads from past trajectories to establish
coherence with their emerging identities (Wenger 1998). Trajectories from the past offered a variety of understanding, skills and practices that shaped the meanings that participants could associate with their professional identity as beginning Design and Technology teachers. Furthermore, these trajectories enabled connections between the classroom and the world of work outside the classroom.

2. Alignment and Visibility of Subject Content and Pedagogical Knowledge
The research findings identified that recognition received from others was central to participants’ understanding of themselves as teachers. Being recognised as a teacher by their colleagues and by those in leadership positions became an essential aspect of the legitimisation of identity (Gee 2001). More specifically for this study, it was the recognition of sameness between aspects of participants’ subject content and pedagogical knowledge and that of their more experienced Design and Technology teaching colleagues that facilitated this recognition. Participants’ understanding of subject content knowledge and competence in delivery became visible and apparent to colleagues as they worked collaboratively in practically-based settings with a range of diverse materials and equipment.

3. Collaboration and Mentoring in School Cultures
As evidenced throughout this study, the collaborative input of colleagues was a significant factor in the formation of participants’ professional identity. Surrounding beginning teachers with a professional culture (Ingersoll & Strong 2011; MacGregor 2012) that supported their personal and professional growth and well-being appeared to be, as predicted, a significant factor in shaping professional identity throughout the first year of teaching. The evidence also suggested that mentoring relationships were strongest when participants and the mentor/s taught the same subjects, topics or year levels. These findings serve to inform schools of the value of providing effective mentoring and induction programs and, in so doing, enabling beginning teachers to overcome any disjuncture in transition that they may experience.

4. The Impact of the University Teacher Education Program
Kamler and Thomson (2006) and Williams (2006) suggested that the culture of university programs and the courses within them can contribute to the formation of professional identity. The findings of this study concurred with this view. The
structure and duration of the teacher education program, as outlined in the literature review, appeared to positively contribute to participants’ subject content and pedagogical knowledge. For instance, Dianna stated that her university study shaped: ‘what she did and how she did it’ (interview 2). The program provided participants with opportunities to observe the practice of in-service teachers and to critique their own understandings and beliefs about the role of a Design and Technology teacher. Beijaard et al. (2004, p. 123) argued that it is the ongoing integration of what is individually and collectively seen as relevant to teaching that enables the professional identity formation process of pre-service teachers to be supported.

5. Pushing the Boundaries – Opportunities to Self-Author
Sloan (2006) argued that, within the given context of schools, teachers are both social products and social producers, that is, teachers have an associated socially produced identity but there is opportunity to shape and transform this perceived identity. Opportunities to shape and transform the socially produced identity of Design and Technology teachers were evident throughout this study. Of significance was the point that participants were encouraged by their experienced colleagues to expand the boundaries of subject content and pedagogical knowledge.

8.5 Contributions of the study
This study has contributed to the research in Design and Technology education by addressing issues that relate to beginning teacher professional identity transition. While research in this area has been extensive, research that has specifically addressed the transition of Design and Technology teachers is limited. This thesis has strongly argued that developing a professional identity is not a process bound by the discrete influences of past histories, university study or specific school contexts. The influences that shaped professional identity often overlapped and were interdependent, in that they impacted on each other. Developing a professional identity and becoming a teacher were like defining identity itself, a challenging, dynamic, relational and multifaceted process that occurred and will continue to occur over time.

These findings are useful not only for understanding the identity transition of beginning teachers but also for offering an insight into the processes of reflection and
self-critique, as captured in narratives, that are part of the orientation of becoming a teacher. This thesis has presented relevant insights into not only how beginning Design and Technology teachers perceived their professional identity but also the influences that served to shape these perceptions. These insights included the similarities and differences in predicted and actual influences as well as changes to these perceptions throughout the first year of teaching.

However, what has differentiated this research from others in the area of identity transition is that, firstly, it has highlighted the significant contribution that personal and professional histories played in validating and enabling beginning Design and Technology teachers to transition relatively seamlessly into the profession. Secondly, it revealed that beginning Design and Technology teachers were able to change the discourses of the past and, in so doing, were able to actively and positively contribute to change in the learning area of Design and Technology education.

All participants in this study successfully combined influences of their pasts and their teacher education program with influences of the present which were often specific to their school context to develop a robust and resilient professional identity. That is, they developed an identity that aligned with the expectations of the profession but, more importantly, it aligned with their own beliefs. The importance of developing such an identity was that it appeared to enable professionalism, commitment and longevity as a teacher.

As established previously in this chapter, participants in this study understood themselves to be part of a new generation of Design and Technology teachers. This was evidenced by Damien in the final interview:

‘When I left uni, there was a sense of excitement amongst the (graduating) group and from some teachers in schools that we had worked with during prac (professional experience) that we were the new generation of D&T teachers. I felt I was going to be part of something that was changing and I was going to be part of that change. This feeling has since become a reality for me’.

(Damien, final interview)
8.5.1 Contributions to research

This study has made a significant contribution to research in a number of ways: firstly, it has identified and addressed a gap in the research through providing an in-depth study that examined the development of and the influences that shaped the professional identity of pre-service Design and Technology teachers as they made the transition into teaching. One significant finding from this study was the willingness of colleagues to support participants in negotiating the contexts of their schools. The marginalisation and resistance to change to which past research (Reynolds 1996; Coldron & Smith 1999; Fetherson 2006; Thomas & Beauchamp 2011) had alluded did not eventuate. Where this study has extended thinking is in regards to how quickly the majority of participants became aligned with and belonged to a community of practice (Wenger 1998).

Secondly, this study has provided insights into how beginning teachers of Design and Technology respond to the significant curriculum and pedagogic changes in this learning area. Participants in this study not only embraced these changes at an individual level but were supported, in most instances, by colleagues to enact these changes within their Design and Technology faculties. Thirdly, this study has investigated the concept of self-authoring and the positive influence that it had on developing a strong professional identity thus enabling participants to successfully negotiate the challenges of the first year of teaching. Finally, this study has provided evidence of the value of a Design and Technology teacher education program that facilitates beginning teachers to develop an expansive and futures-orientated subject content and pedagogical knowledge. It is this knowledge that not only facilitates alignment and connectivity (Wenger 1998) with experienced colleagues through similarities in practice but, importantly, it enables, as reflected in this study, retention and advancement in the profession.

8.6 Suggestions for future research

Participants in this study came from one university in a particular location and context. It would be useful to replicate the study in a number of alternative university settings to determine if the findings were commensurate with those of this study.
This study examined the development of professional identity of Design and Technology graduates from a four-year university degree. However, there are other, shorter pre-service programs for Design and Technology teachers and it would thus be useful to examine the development of identity of graduates from these programs.

Participants in this study have highlighted the positive influence of mentor teachers as a way in which schools could support beginning teachers. In light of the high attrition rates for beginning teachers, more extensive research needs to be conducted on how beginning teachers can be better supported during this time of transition.

While this study has provided an insight into the relationship between life histories and teaching in Design and Technology education, further research could facilitate a greater understanding of the formative influences (Furlong 2013) in pre-service and in-service teachers’ lives and the extent to which these can impact on shaping professional identities.
**Postscript**

In contrast to the Australian statistics which state that 25–40% of beginning teachers resign in their first 3–5 years of teaching (Berliner 2001; Ewing & Smith 2003), all 10 participants of this collective case study are continuing to teach in Design and Technology education. The majority are teaching in the same school in which they commenced their teaching career five years ago. Four participants have moved into leadership roles as faculty coordinators. Many of the participants have continued to push the boundaries of what it means to be a teacher of Design and Technology: for example, Damien has shared his expertise in the area of advanced manufacturing with teachers internationally and Evan has become an Australian representative for the technology schools of America.
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Appendices

Appendix 1 Expression of Interest Form

Research and Innovation Services
University of South Australia
Mawson Lakes Campus
Tel: 08 8302 3523
email: alice.granger@unisa.edu.au

Expression of Interest Form

Expression of Interest and Contact Details

I am willing to be contacted by Denise MacGregor, once I have completed my study and all assessment in the Bachelor of Education, Design and Technology (LBDT) or the Bachelor of Education, Primary Middle (LBPM) programs, to discuss the possibility of being involved as a participant in her PHD study; titled ‘Narrative Constructions of Beginning Design and Technology Teachers’ Professional Identity’.

I acknowledge that by providing my contact details I am not, at this stage consenting to my involvement in the study in any way.

Signed ………………………………………………………………………

Contact details
Name: …………………………………………………………………….
Address: …………………………………………………………………
Email: …………………………………………………………………
Phone: Home…………………..Mobile…………………………….


Appendix 2 Information Sheet

Denise MacGregor,
University of South Australia,
Mawson Lakes Campus,
South Australia, 5095

Dear

As you are aware I am currently studying for my Doctor of Philosophy through Griffith University in Queensland. Now that you have completed your study and are about to commence your teaching career I am writing to invite you to be a participant in a research study that will focus on Design and Technology Education. More specifically the focus for this study is will be on how you perceive your professional identity as a beginning Design and Technology teacher.

It is anticipated that the outcomes of this study will serve to inform and shape the content of the Bachelor of Education, Design and Technology Education program at the University of South Australia. It will also provide existing school and university based mentoring programs with new knowledge that could support beginning teachers’ as they make the transition into schools.

As a participant in this study you will be initially involved in focus group discussion. The focus group discussions will be audio-taped. Given the nature of the focus group confidentiality cannot be guaranteed for this part of the study.

A small number of participant’s (10) will then be selected to continue in the study. This group of participants will be involved in be a total of three semi-structured interviews over a fourteen month period. This group of participants will also be encouraged to keep an e-journal that records their journey as they commence teaching. The setting for the interviews and the focus group meeting is negotiable. The interviews will be audio-taped so that that comments can be revisited throughout the study. Copies of e-journal entries will also be kept and revisited for the duration of the study.

If you do agree to become a participant in this research you will be assured of confidentiality. No individual will be identified. All records containing personal information, including your name and worksite will remain confidential. Pseudonyms will be used throughout the study and for any resultant publications. All information collected from you will be retained for a five year period by the University of South Australia and Griffith University.

You may withdraw from this research at any stage and you will not be required to provide any explanation for doing so.
If you decide to accept this invitation to participate could you please read and sign the enclosed consent form and return to me in the addressed envelope provided.

If you would like further clarification about this study or your involvement please contact me. Or you may wish to contact my research supervisor Associate Professor Howard Middleton at Griffith University (07 3735 5724). If you have any concerns regarding the ethics of this research please contact the Chair of the Ethics Committee, University of South Australia, Ms. Vikki Allen (8302 3921)

I look forward to hearing from you soon.

Yours Faithfully, Denise MacGregor
Appendix 3 Consent Form

Consent Form

**Project Title:** Narrative Constructions of Beginning Design and Technology Teachers’ Professional Identity.

**Researcher’s Name:** Denise Jane MacGregor

**Supervisor’s Names:** Professor Howard Middleton - Griffith University

Judith Peters - University of South Australia

- I have read the Information Sheet, and the nature and the purpose of the research project has been explained to me. I understand and agree to take part in the focus group. If selected to continue in the study I understand and agree to take part in the three semi-structured interviews and to maintain an e-journal.

- I understand that I may not directly benefit from taking part in the project.

- I understand that while the information gained during this study may be published, I will not be identified and my personal results will remain confidential.

- I understand that I can withdraw at any stage and it will not affect my status now or in the future.

- I confirm that I am over 18 years of age.

- I understand that I will be audio taped and video-taped during the study.

- I understand that confidentiality cannot be guaranteed for the focus group discussion.
I understand that the video and audio tape will be destroyed once a transcript of the content has been produced. The transcript will be securely stored at the University of South Australia for a five year period with access restricted to the researcher, and the supervisors.

Name of participant ............................................................

Signed .............................................................................

Dated .............................................................................

I have explained the study to the participant and consider that he/she understands what is involved.

Researcher’s signature and date .................................