

Patterns of knowledge and knowing:

The personal epistemologies of tertiary preparation students

Thesis submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy

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Abstract

The study is a contribution to the field of personal epistemology that emerged in the USA when pioneering researchers (Baxter Magolda 1992; Belenky et al. 1986; Perry 1970) explored and mapped patterns of implicit assumptions about knowledge and knowing and associated meaning-making by individuals.

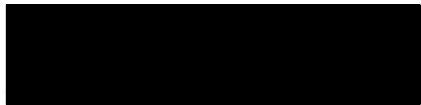
The study employed a qualitative methodology to gain a holistic understanding of the personal epistemology of a cohort of tertiary preparation students who were enrolled in Certificate IV in Health Science Foundations (HSF) in 2009 in Australia. It was underpinned by a broadly interpretative paradigm that drew on insights from constructivism, phenomenology and hermeneutics.

The research involved the development of a conceptual framework informed by earlier research (Hofer & Pintrich 1997) to analyse 76 naturalistic texts that were produced by HSF students in 2009 in response to open-ended essay topics – what Kuhn (1991) referred to as ‘ill-structured problems’. The writing tasks were analysed to identify the epistemological assumptions that could be inferred from the texts and the patterns that they formed. In this study the patterns are named epistemological lenses. Eight phenomenologically inspired semi-structured interviews were also conducted with former HSF students in 2014 and interpreted through the conceptual framework in order to provide additional insights into the personal epistemology of participants.

The study found that six epistemological lenses could be inferred from the data using the conceptual framework. It compared these lenses to epistemological positions identified in earlier research and argued that the findings demonstrate the efficacy of the conceptual framework as a tool of analysis. The study also highlighted the role of lived experience in the emergence of personal epistemology thereby complementing earlier research which has often reported on the role of education in epistemological development. It concludes by considering the implications of the study for future scholarship and tertiary preparation courses.

Doctor of Philosophy Declaration

I, Frances Newell, declare that the PhD thesis entitled Patterns of knowledge and knowing: The personal epistemologies of tertiary preparation students is no more than 100,000 words in length including quotes and exclusive of table, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.



Signature

14/3/2016

Date

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Glossary

ATTLS – The Attitudes Toward Thinking and Learning Survey, Galotti et al. (1999)

ATAR – Australian Tertiary Admission Rank - a student's ATAR is derived from his/her academic assessments in the final year of secondary schooling (Year 12). ATARs are used by universities to select students for admission into courses.

Certificate III – a vocational or further education qualification e.g. Certificate III in Aged Care or Certificate III in General and Adult Education

Certificate IV – a vocational or further education qualification

Certificate IV in Nursing – pre-requisite vocational qualification for Division II nurses in Victoria prior to 1 July 2010

Diploma of Nursing – pre-requisite vocational qualification for Division II nurses in Victoria after 1 July 2010

Division 1 Nurse – Nurse with a Bachelor qualification

Division 2 Nurse – Nurse with a vocational qualification. Division 2 nurses are required to work under the direction and supervision of a Division 1 nurse

EBQ – Epistemological Beliefs Questionnaire, Schommer (1990)

EBS – Epistemological Beliefs Survey, Wood and Kardash (2002)

EDQ – Epistemic Doubt Questionnaire, Krettenauer, Hallett, & Chandler (1999)

ETA – Epistemological Thinking Assessment, Kuhn, Cheney and Weinstock (2000)

ESL – English as a Second Language

ESL background – In the thesis, HSF students are described as ESL background if they were enrolled simultaneously in an ESL course and HSF and/or described themselves as speaking a language other than English (LOTE) at home

ESB – English Speaking Background

GTN – (1) Course in Gateway to Nursing and Health Sciences or (2) Certificate IV in Gateway to Nursing. Both courses were predecessor courses to HSF - Certificate IV in Health Science Foundations

HSF – Certificate IV in Health Science Foundations– successor course to (1) Course in Gateway to Nursing and Health Sciences (GTN) and (2) Certificate IV in Gateway to Nursing (GTN). HSF was colloquially known as Gateway to Nursing

LEP – Learning Environment Preferences Survey, Moore (1989)

LOTE – Language Other Than English

MID – Measure of Intellectual Development, Knefelkamp (1999)

MER – Measure of Epistemological Reflection, Baxter Magolda (1992)

TAFE – Technical and Further Education

Tertiary preparation course – an alternative pathway into tertiary education to that based on a student's Australian Tertiary Admission Rank (ATAR)

VET - Vocational Education and Training

WWK – 'Women's Ways of Knowing: The development of self, voice and mind,' Belenky, Clinchy, Goldberger and Tarule (1986)

Year 12 – Final year of secondary schooling in Australia

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Chapter 1: Introduction

1.1 Background

This study seeks to extend understanding of personal epistemology defined as implicit assumptions about knowledge and knowing held by individuals. It is a contribution to the scholarship of personal epistemology that emerged from a wave of ground breaking studies in the USA in the last three decades of the twentieth century. These studies used phenomenologically inspired interviews conducted in education and community settings to explore and map patterns of implicit assumptions about knowledge and knowing and associated meaning-making by individuals (Baxter Magolda 1992; Belenky et al. 1986; Goldberger et al. 1996; Perry 1970).

The rich pioneering research triggered decades of subsequent research not only because the early theoretical conceptualizations laid the basis for the field of personal epistemology but also because subsequent research has linked personal epistemology to learning and the development of argumentation, problem-solving and academic achievement (Feucht & Bendixen 2010, p. 4). Kuhn and her colleagues have linked epistemological theories to juror reasoning skills (1994, pp. 295-6) and Brownlee has argued that epistemological beliefs may influence teaching as well as learning (2004, p. 4). In other words, many researchers have explored the implications of personal epistemology for education and civic participation.

The profile of students comprising the study provides an alternative context for the study of personal epistemology to that provided by students admitted to Bachelor programs on the basis of academic success in secondary schooling. That is, the study draws on data from a cohort of tertiary preparation students who were enrolled in Certificate IV in Health Science Foundations (HSF) in 2009 in Australia. As will be summarised in section 1.4 and elaborated in Chapter 6, the situated nature of the study means that it has significance for the scholarship of personal epistemology and for tertiary preparation courses which provide an alternative pathway into tertiary education to that based on a student's Australian Tertiary Admission Rank (ATAR)..

The genesis of the current research, however, was not an interest in personal epistemology. Rather, the current study arose from an earlier quantitative study in which I reported on the higher education completion rate of three groups of tertiary preparation students at an Australian university (Newell 2012). In 2005, the students

were enrolled in one of three courses: Course in Gateway to Nursing and Health Sciences (GTN); the Diploma of Liberal Arts; or the dual award Diploma of Liberal Arts / Bachelor of Arts. The study tracked their academic progress until 2010 and demonstrated that, for those who continued their Bachelor degree studies at the same university, the degree completion rate after five years was comparable to the degree completion rate of all students. It also showed that the educational pathways that students pursued subsequent to their enrolment in a tertiary preparation course took many different forms. These included articulating from the tertiary preparation course to a vocational (VET) diploma prior to enrolling in a degree, enrolling directly into a Bachelor of Nursing or enrolling in a Bachelor degree in a non-Nursing field. Given that the Bachelor degree completion rates of the former tertiary preparation students were comparable to all students after five years and that this was true irrespective of the path that they subsequently followed into a Bachelor degree, I became interested in questions such as the student attributes that contributed to their subsequent educational progress and the contribution of tertiary preparation courses to that progress.

As a result, I consulted the university's administrative records relating to another group of tertiary preparation students who had enrolled in the Certificate IV in Health Science Foundations (HSF) in 2009. My intention was to conduct a qualitative study of their learning journeys. The records included: personal statements in which students explained how personal circumstances had impacted on their previous academic achievement; and writing tasks undertaken in the selection interview in which students addressed topics as diverse as a comparison of health care systems, the causes of diabetes, factors that facilitate learning, the role of women, and social and technological change. The writing tasks proved particularly relevant to the study because they were almost always included in the administrative records (78 writing tasks out of 84 applications) and their authenticity as the work of the student was assured by the fact that they were written during a 20 minute period in the course of their selection interview. The question that then arose was what I might learn from reading these writing tasks and how they might contribute to a qualitative study of the learning journeys of tertiary preparation students.

In this context, I became interested in research that suggested that personal epistemology plays a crucial role in argumentative reasoning (Kuhn 1991, pp. 264-5), problem-solving, and academic achievement (Bendixen & Feucht 2010, p. 4). Findings have also been reported that epistemological beliefs are related to: reading

comprehension (Schommer 1990); to achievement, motivation, conceptual change, and learning strategies (Hofer 2004, p. 130); and to self-regulated learning and conceptual change learning (Chai et al. 2010, p. 112). Brownlee has also explored changes in epistemological beliefs following an epistemological beliefs teaching program (2003, p. 95). More broadly, Meyer and Land (2006) have identified a number of barriers to students' understanding of new discursive practices including students' prior conceptions of knowledge. These findings focused my attention on personal epistemology and I began to ask myself whether the writing tasks could be analysed to provide a snapshot of the personal epistemology of HSF students at the commencement of their studies and whether this in turn may be relevant to understanding their subsequent learning journeys. Moreover, I also wondered whether the insights derived from the writing tasks could provide a touchstone for comparison with interviews to be conducted for the PhD in 2014.

With this in mind, I continued reading in the area of personal epistemology research whilst beginning to read the writing tasks. Almost immediately, I became totally absorbed by the writing tasks because of the immediacy of the writing that was often in direct contrast to the abstract and academic nature of the topics that they were asked to respond to. Unexpectedly, the writing tasks often revealed vivid glimpses of the students' complex lives. For instance, in response to the topic, 'Compare Australia's health care system with the health care system of another country,' Martha¹, one of the students, evoked the dire conditions in her country of origin, not by referring to impersonal statistics such as mortality rates, but rather by vividly describing her experience of seeing overcrowded hospitals and death and dying. She conveyed this experience conversationally and with immediacy and authenticity. She wrote, *'As I was saying, back in my country ... I have seen a lot of things, sick peoples in the hospital, not even a big hospital, small one with millions of sick peoples waiting to be treated and feel better as other. But instead they are dying because there are no good educated doctors and proper hospitals for them.'* She then compared Australia's health care system to that of her country of origin with equal immediacy and a clear conviction that her recent experience of going to hospital in Australia was convincing evidence of the superiority of the Australian health care system. She wrote as if speaking directly to a companion, *'As myself, being in is like being in heaven, I was sick three weeks ago, which lead me to the hospital, within an hour, I was called be the doctor and checkout*

¹ Participant names are all pseudonyms to protect confidentiality

my sickness. So she gave me mandicine and by now I'm way better, which if I was back in [country of origin], I would have suffered.' It can be seen then that Martha's brief writing task does more than imply assumptions about knowledge and knowing – it also conveys the lived experience in which her assumptions have developed.

When reading the writing tasks it also became apparent that whilst there were parallels with the epistemological positions, perspectives and phases of earlier researchers (Baxter Magolda 1992; Belenky et al. 1986; Perry 1970) there were also differences. For instance, in response to the topic, 'Women should stay at home and look after the children while their husbands go out to work. Discuss this statement,' Verna, another student, wrote, *'Mother's are the leaders of the house. When children need some thing they ask their mother also mother's are the teachers of their kids. Children learn most thing's from their mother. That's why I things mother's should stay home and look after their children.'* Here, Verna's single vantage point excludes consideration of any alternative point of view. In this respect it accords with Perry's dualism (1970, p. 9) where 'The student sees the world in polar terms of we-right-good vs. other-wrong-bad.' But Verna's writing is not consistent with Perry's description of dualism as where, 'morality and personal responsibility consist of simple obedience' (1970, p. 59). Rather, Verna's writing accords women a leadership role in ensuring that truth, as she understands it, is enacted in daily life and transmitted to the next generation. In this sense, Verna views women as actively implementing their beliefs, rather than passively complying with authority. This conveys Verna's sense of women's agency, rather than passivity.

In short, the challenge of how to incorporate the writing tasks into the study was twofold. Firstly, it was how to present the writing tasks as meaningful wholes which conveyed ideas and experiences that were important to the authors rather than simply to 'slice and dice' the writing tasks for purposes of analysing the underlying assumptions about knowledge and knowing. Later this concern appeared in another guise. Namely, this was how to present the interviews as meaningful wholes that illuminate interviewees' personal epistemology in the context of their lives rather than simply to analyse the interviews in terms of how they contribute to further understanding of the epistemological categories that had emerged from the writing tasks.

The second challenge presented by the writing tasks was how to develop a conceptual framework for analysing them that acknowledged the contribution of earlier research

but allowed differences in the personal epistemology of the participants in the current study to emerge. In wrestling with these questions, the focus of the study gradually moved from understanding the role of personal epistemology in student learning journeys to **How can we understand the personal epistemology of tertiary preparation students?** In this context, the study became focussed on insights into the situated personal epistemology of individuals. These insights were then amplified by a small number of interviews in which participants gave accounts of the processes and circumstances of their epistemological development.

The refined objective of the study implied four specific research questions that are outlined in section 1.3. Before addressing these questions, however, section 1.2 will introduce the HSF cohort and the tertiary preparation course in which they were enrolled.

1.2 The cohort and the context of the study

The current study explores personal epistemology among a group of participants whose demographic background differs from that of participants in two landmark studies by Perry (1970) and Baxter Magolda (1992) but shares similarities with the demographic background of participants in studies by Belenky et al. (1986) and Brownlee et al. (2010). The significance of the focus on demographic background is that Code has argued that, 'social, political, cultural, and psychological "forces" ... shape the world and its inhabitants' (2005, p. 93) and on this basis she advocates for an epistemology that considers the co-constituting relationship between situation, knowledge and knower. Consistent with Code's argument, Baxter Magolda (1992, p. 393) argued that a 'social constructivist perspective requires that the reader be given as much information about context as possible to use in judging whether a book's findings can be transferred to other situations.' From my perspective, providing information about the participants in the current study also acknowledges the often difficult circumstances of their lives and the challenges that informed the development of their personal epistemologies.

The implications of a situated approach to understanding personal epistemology are threefold. The implications are firstly, that the demographic characteristics of the current cohort are clearly conveyed, secondly that comparisons are made with the cohorts of earlier research (see Chapter 3), and finally that the Certificate IV in Health Science Foundations (HSF) course in which the students were enrolled is briefly

outlined. I will begin with a description of the cohort drawn from demographic details recorded on the students' application forms. As reported in detail in Chapter 3 section 3.3.1, almost 90% of the 76 HSF students were women, over two thirds were from an English as a Second Language (ESL) background, almost half were aged 22 years or older when they enrolled in the course, and none had met the entry requirements for the Bachelor of Nursing on the basis of their secondary schooling when they commenced HSF in 2009. In fact, almost 40% had not completed secondary education in Australia.

Supplementing the quantitative account of the cohort's demographic characteristics, however, are the personal statements that students sometimes appended to their application forms. These optional statements are not used as data to be analysed for the research questions in Chapters 4 and 5. However, they are useful to support understanding the cohort, since they provide additional information to situate the students' personal epistemologies and to convey the real life challenges that confronted participants and informed their epistemological development. Consequently, excerpts from two personal statements are presented here.

The first excerpt is from Marjorie, a 20 year old student of ESL background who had not completed Year 12 in Australia when she enrolled in HSF. As recounted in her personal statement, both her parents had died by the time she was nine at which point she became responsible for her younger brothers. At fifteen, she travelled to an English speaking country to live with her grandmother before migrating to Australia as an eighteen year old to live with an aunt. At no time, however, did she speak English at home. Moreover, unfortunately for Marjorie, '*There was always a lot of fighting in the house*' and '*I had a big argument with my aunty's husband and the family told me to move out.*' At the time of applying for HSF, Marjorie was '*living in shared accommodation.*' In other words, Marjorie's personal statement conveys the complexity of her personal circumstances in a way that adds depth to the description of the cohort as predominantly women from a non-English speaking background with often incomplete secondary education.

Emma's personal statement also adds depth to the description of the cohort by conveying the reality that lies behind the generic description of her as being a 19 year old student from an English speaking background who had completed Year 12 in Australia but had not gained entry to a Bachelor of Nursing. In her personal statement she described her circumstances in the following way, '*I have suffered Post traumatic*

Stress after [a] family incident which required multiple court hearings which found the offender guilty. My mum was admitted to the ... Psychiatric Unit for ECT treatment over 3 weeks in 2000 [when Emma was eleven years old] following her suicidal attempts. I was left to care for the family which put a lot of stress on me which then caused my health to be affected by Depression. I was then admitted to ... Adolescent Hospital due to having a breakdown. Prior to now, I'm seeing a Psychiatrist which I attend regular appointments.' In other words, Emma's personal statement conveys the complexity of her personal circumstances in a way that adds depth to the generic description of her age, language background and level of formal education. As argued at the outset, however, it is important to reiterate that the primary focus of the study is personal epistemology in the context of a specific cohort, rather than the cohort as such.

The tertiary preparation course in which the students were enrolled in 2009 was the Certificate IV in Health Science Foundations (HSF). The six-month, discipline-linked, tertiary preparation course provided disciplinary knowledge in Biology, Chemistry and Maths. The course offered individualised and customised learning support that focused very strongly on the scaffolded development of numeracy and language and literacy skills which were contextualised for the field of study of the student's destination course (Nursing). Language development activities included written English and oral presentations and 'learning to learn' activities such as research and problem solving. Numeracy activities included tasks such as calculating medication dosages.

HSF was one of a suite of tertiary preparation courses that the university provided as an alternative entry point into tertiary education (Newell 2010). The dominant pathway into tertiary education in Australia is directly from secondary school based on a student's Australian Tertiary Admission Rank (ATAR) which is derived from the student's academic assessments in the final year (Year 12) of secondary schooling. Universities also sometimes enrol students who have completed vocational qualifications in the Vocational Education and Training (VET) sector. Tertiary preparation courses provide another pathway into tertiary education and are often described as 'second chance' further education. These accredited courses are intended to address the educational needs of students with low ATAR scores, mature age people returning to study after a prolonged period in or out of the workforce, people from an ESL background who could benefit from intensive language

development, and people from a low socio-economic background who could benefit from academic support to enhance their success in higher education.

In other words, the educational background of the participants in the current study is very different to that of participants in many earlier studies that have reported on personal epistemologies that have been forged in formal tertiary education settings (Baxter Magolda 1992; Brownlee 2003, 2004; Brownlee & Berthelsen 2008; Chai et al. 2010; Chan & Elliott 2002; Liem & Bernardo 2010; Perry 1970; Phan 2008; Walker et al. 2012; Youn 2000). On the other hand, the educational background of the participants in the current study has similarities with earlier studies that have reported on personal epistemologies that have been forged outside of university education, for instance, subjective knowers in Belenky et al. (1986) or care givers in vocational education settings (Berthelsen, Brownlee & Boulton-Lewis 2002; Brownlee, Berthelsen & Boulton-Lewis 2010; Brownlee et al. 2008). Section 3.3.3 will develop this point in detail with reference to three landmark American studies and one important Australian study.

1.3 The research questions

In the light of the study's focus on personal epistemology in the context of a specific cohort, the overall aim of the current study is to explore the question, **How can we understand the personal epistemology of tertiary preparation students** through analysis of the writing tasks of tertiary preparation students and subsequent interviews with them? The study is grounded in previous scholarship that will inform the development of the conceptual framework. It will use naturalistic texts and interviews as data sources to infer the personal epistemologies of the participants. Consequently, it will contribute to the scholarly understanding of personal epistemology among a cohort of tertiary preparation students.

The research questions are:

- How may previous scholarship inform the development of a holistic conceptual framework for the study of the personal epistemology of tertiary preparation students?
- How may naturalistic texts provide insights into the personal epistemology of tertiary preparation students?
- How may interviews contribute to our understanding of the personal epistemology of tertiary preparation students?

- What understandings about the personal epistemology of tertiary preparation students emerge from the application of the proposed conceptual framework to the research materials?

1.4 Significance

These questions seemed a fruitful area for doctoral research because personal epistemology has been claimed to have a role in meaning making and academic achievement. In this light, the development of a conceptual framework to facilitate the description of the epistemological assumptions of an under studied cohort (tertiary preparation students) using naturalistic texts and interviews may make a significant contribution to the study of personal epistemology and contribute to curriculum development and teaching in tertiary preparation courses.

The area of personal epistemology has attracted scholarly attention because of its perceived role in meaning-making and academic achievement and because it has long been argued that education can contribute to epistemological development. Perry describes the role of personal epistemology in meaning making in terms of an evolution in the forms in which students construe their experience. He says, 'These "forms" characterize the structures which the students implicitly or explicitly impute to the world, especially those structures in which they construe the nature and origins of knowledge, of value, and of responsibility' (Perry 1970, p. 1).

Schommer (2004, p. 27) argues that, 'The role of epistemological beliefs is likely to be subtle but ubiquitous. These beliefs are likely to influence how students learn, how teachers instruct, and subsequently, how teachers knowingly or unknowingly modify students' epistemological beliefs.' In other words, like Perry, Schommer recognises the potential for education to contribute to epistemological development. Perry claims, for instance, that, the educational impact of diversity can be at its best when it is deliberate. 'When a teacher asks his students to read conflicting authorities and then asks them to assess the nature and meaning of the conflict ... He can teach the relation, the relativism, of one system of thought to another' (1970, p. 35).

As summarised in section 1.2 and addressed in more detail in section 3.3.1, a new perspective that the study brings to personal epistemology research is the cohort of students comprising the study. Working with this cohort offers the possibility of offering insights into factors outside formal education that contribute to epistemological development as well as describing epistemological positions that have not been

informed by participation in tertiary education contexts. In this way it responds to Hofer's suggestion that researchers' consider 'what additional beliefs about knowledge and knowing might exist, beyond those currently being measured' (2010b, p. 180). In addition, the study also has implications for tertiary preparation course development and teaching in that insights into the epistemological assumptions of tertiary preparation students could inform curricula planning to meet the needs of the cohort. This point is further developed in Chapter 6.

The third factor contributing to the significance of the current study is that naturalistic texts are available as a data source. This meant that there was a way of collecting data about the 76 students in the study that was commensurate with the scale of a PhD project but avoided the measurement difficulties with administering a questionnaire such as Schommer's (1990) Epistemological Beliefs Questionnaire (EBQ). The psychometric properties of the EBQ and two similar instruments have been critiqued by DeBacker et al. (2008) who demonstrated that these self-assessment instruments aimed at validating dimensions of personal epistemology do not have strong psychometric properties.

The availability of naturalistic texts for this study, moreover, offered the possibility of inferring the personal epistemology of participants from research materials produced prior to their participation in university education. In addition, the topics that they responded to were 'about real, meaningful issues that are familiar to them in their own experience' (Kuhn 1991, pp. 10-1). In this way, the use of naturalistic texts is analogous to Kuhn's argument for the use of ill-structured problems to explore informal reasoning. Ill-structured problems are problems that call for an open-ended answer with no definitive solution such as 'What do you think about ...?' By comparison, well-structured problems have a single, well-defined correct answer (1991, p. 7). Kuhn argued that ill-structured problems bear a closer relation 'to the thinking that people engage in outside of psychological laboratories' than well-structured problems especially constructed for research purposes (1991, p. 9). Similarly, unlike production tasks designed specifically to explore personal epistemology through a focus on students' educational views, the naturalistic texts in the study are about real, meaningful socio-cultural issues that are familiar to participants. Moreover, as outlined in section 1.1, the use of naturalistic texts unexpectedly revealed vivid glimpses of the students' complex lives and in this way their use is consistent with one of the assumptions underpinning the study - that personal epistemology is situated and interconnected to the knower's life circumstances.

Finally, the development of a conceptual framework for the study that draws on previous research facilitates the analysis of the research materials in relation to earlier research whilst also facilitating the description of specific features of the epistemological assumptions of the HSF cohort.

In summary, the objective of the study, the cohort, the naturalistic texts that are used as a data source and the development and application of the conceptual framework have the potential to contribute to the scholarship of personal epistemology. In Chapter 6, the significance of the study's findings will be reviewed in this light.

1.5 Research stages

The research questions are answered within a broadly interpretive paradigm of qualitative research consistent with my assumptions about epistemology and informed by the theoretical perspectives of phenomenology, hermeneutics, constructivism and the scholarship of personal epistemology. There are three stages to the research. The first considers a range of theoretical approaches to the study of personal epistemology with a view to developing an appropriate conceptual framework for the current study (see Chapter 2). Such a framework facilitates comparison with earlier research in the field without pre-judging the epistemological assumptions that may emerge from the study. In other words, in this stage, I address the first research question and provide the foundation for the next two stages.

The second stage analyses 76 naturalistic texts (writing tasks) addressing ill-structured problems that were produced by students who enrolled in HSF in 2009. The writing tasks are analysed in two ways (see Chapter 4). Firstly, discrete segments of text are identified as significant in light of the conceptual framework and then coded for future reference. Segments of text that are coded as illustrative of epistemological assumptions are then correlated with other segments of text to reveal patterns of epistemological assumptions. Secondly, the writing tasks are analysed holistically in order to present each writing task as a vignette. The purpose of the vignettes is to focus on the meaning as well as the epistemological assumptions of the text. In short, both forms of analysis contribute to answering the second research question.

The third stage of the study involves eight phenomenologically inspired semi-structured interviews with former HSF students conducted in 2014. The interviews include administration of a writing task and an opportunity for the interviewees to reflect on their 2009 writing tasks. The interviews are interpreted in light of the conceptual

framework (see Chapter 5) thereby answering the third research question. Chapter 6 integrates the study's findings to answer the fourth research question: What understandings about the personal epistemology of tertiary preparation students emerge from the application of the proposed conceptual framework to the research materials? It includes a summary of the six epistemological lenses that have been inferred from the two data sets (writing tasks and interviews) in the form of Table 6.1.

1.6 Overview of chapters

The first chapter has outlined the genesis of the research, the characteristics of the cohort, the research questions, their significance and the stages of the research.

Chapter 2 will review the field of personal epistemology in terms of its three traditions – the developmental, cognitive and contextualist approaches (Pintrich 2002). The review will inform the development of a conceptual framework which will facilitate comparison with earlier research in the field whilst being open to new insights into personal epistemology that may emerge from the study. In order to explore the framework's efficacy in summarising and comparing the epistemological categories of earlier researchers the framework will be applied to Perry's (1970) 'Positions' and Belenky et al's (1986) 'perspectives.' The chapter will conclude with an account of the conceptual framework including its underlying assumptions about the nature and development of personal epistemology, the conceptual tools that it will provide and how the knower's agency will be conceptualised. The conceptual framework will also be illustrated by a diagram.

Chapter 3 will outline the choice of methodology for the study and the research design. The interpretive paradigm of qualitative research is consistent with the researcher's assumptions about epistemology and is informed by the theoretical perspectives of phenomenology, hermeneutics and constructivism. Chapter 3 will then describe the study's three phase research design, the study participants and research materials. The study participants were 76 students who were enrolled in HSF in 2009, eight of whom were interviewed in 2014. The research materials were 76 naturalistic texts (writing tasks) produced in 2009 by the participants and eight phenomenologically inspired semi-structured interviews. The first phase of data collection was intended to provide an overview of the epistemological assumptions of the whole cohort prior to interviews with eight participants. This intention guided the process for constructing the interview sample as will be discussed. The data analysis and interpretation methods that were applied to the writing tasks and the interviews are described and justified as

being rigorous and consistent with the theoretical perspectives informing the study. Chapter 3 will close with a discussion of the ethical processes that have informed the study.

Chapter 4 will be in two parts. Firstly, it will infer assumptions about knowledge and knowing from the writing tasks using signposts to personal epistemology. On this basis it will identify patterns of epistemological assumptions and the knower's sense of agency. These patterns of assumptions will be termed epistemological lenses and they will be provisionally described in text and diagrams prior to further exploration in the interviews. Secondly, Chapter 4 will present the writing tasks holistically in the form of vignettes in order to focus on the students' intended meaning in their responses to specific topics; to introduce the students who will later be interviewed; and to provide the basis for triangulating the analysis of the writing tasks. Chapter 4 will consider whether the epistemological lenses that have been identified may be interpreted in terms of an overarching framework where the source of knowledge is a primary basis for categorising epistemological lenses.

Chapter 5 will present the analysis of eight interviews – six will be individual interviews and one will be a composite account based on two interviews. The interview recruitment process was designed to recruit at least one interviewee for each of the epistemological lenses identified on the basis of the 2009 writing tasks. The interviews provide holistic descriptions of the personal epistemology, meaning making and agency of students who are featured in the vignettes in Chapter 4. In this way, they provide more nuanced descriptions of their personal epistemology than could be inferred from the 2009 writing tasks. Secondly, they inform an assessment of the research potential of naturalistic texts and interviews for the field of personal epistemology by enabling a comparison between the insights into personal epistemology derived from both data sets. The interviews also contribute to a review of the epistemological lenses that were developed on the basis of the 2009 writing tasks and to understanding how factors outside formal education inform the emergence of personal epistemology. Chapter 6 will state the study's findings in the form of answers to the research questions. This will include presenting the conceptual framework and commenting on its most useful features; addressing the credibility of the writing tasks and interviews as data sources and presenting a summary of the six epistemological lenses based on analysis of the writing tasks and the interviews. Chapter 6 will then consider the contribution of the study to scholarship with respect to the significance of the conceptual framework, the nature of the cohort and the data collection methods. Consideration of the conceptual

framework will include its role in enabling distinct epistemological lenses to be described and to be distinguished from epistemological positions identified in earlier research. Finally, Chapter 6 will consider the implications of the study for future scholarship and tertiary preparation courses.

Chapter 2: Literature Review

The research problem underpinning the Literature Review is how to develop a flexible conceptual framework to explore assumptions about knowledge and knowing among an under-researched cohort – tertiary preparation students. The Literature Review is intended to critically consider scholarship in the field in order to address several aspects of the research problem. Firstly, to inform the design of the conceptual framework so that it will allow the researcher to see how individuals weave assumptions about knowledge and knowing into holistic frameworks for meaning-making; secondly, to allow potentially new patterns of assumptions about knowledge and knowing to emerge by designing the framework so as not to reduce findings to either/or alternatives. The framework should also facilitate comparisons with earlier studies; and finally, it should be applicable to analysing 76 brief naturalistic texts to provide an overview of the patterns of epistemological assumptions within the cohort and also to analysing a smaller number of much longer interview transcripts.

Moreover, it is important to ensure that the conceptual framework along with the Literature Review, the methodology and the analysis of the research materials is consistent with the researcher's epistemological assumptions. These include the assumption that the nature of knowing is an interpretive (hermeneutic) process in which knowers have agency regarding the knowledge that they draw on (source of knowledge) and the approaches that they use to justify their views (justification of knowledge). It also assumes that the nature of knowledge (structure) is often situated rather than universal, holistic rather than fragmented and that knowledge takes theoretical and practical forms. As to the certainty of knowledge it is assumed that this can take many forms.

Personal epistemology is concerned with the implicit assumptions about knowledge and knowing held by individuals (Baxter Magolda 1992; Belenky et al. 1986; Briell et al. 2011; Hofer & Pintrich 2002; Kuhn 1991; Perry 1970). Prior to the emergence of the field of personal epistemology in the USA in the second half of the twentieth century, however, western philosophers had been debating the nature of knowledge and knowing for centuries. Before narrowing the focus of the Literature Review to the field of personal epistemology, therefore, the Literature Review begins with a discussion in Section 2.1 of some concepts from philosophy and psychology that inform the study. Section 2.2 surveys the field of personal epistemology research with reference to the

holistic, individuated and contextualist approaches to personal epistemology. Section 2.3 will consider the work of some key theorists in the holistic tradition of personal epistemology in detail through a series of 'signposts' to personal epistemology: Perry (1970); Belenky, Clinchy, Goldberger and Tarule (1986); and Kuhn, Cheney and Weinstock (2000). Finally, Section 2.4 will draw together elements from the preceding sections to inform the development of a conceptual framework for conducting and interpreting empirical research into the personal epistemology of students who enrolled in a tertiary preparation course in 2009.

2.1 Frameworks and concepts informing study

This section briefly discusses some of the ideas and concepts drawn from philosophy and sociocultural psychology that inform the methodology of the study and my reading of the personal epistemology literature, and that are relevant to understanding the research materials. These ideas include Aristotle's distinctions between categories of knowledge; claims that knowledge is socially embedded and embodied; interpretive theories of knowledge that emphasise human agency; and theories of knowledge that encompass the whole and the parts.

Aristotle argued that there are three categories of knowledge which he termed: *episteme* (theoretical knowledge), *techne* (productive knowledge) and *phronesis* (social-ethical knowledge). The two latter categories are forms of practical knowledge (Saugstad 2005, p. 347). Importantly, Saugstad argues that the implication of Aristotle's categorisation of knowledge is that 'knowledge connected to the field of practice is significantly different from theoretical knowledge' and that 'practical forms of knowledge exist in their own right and with their own characteristics' (p. 347).

Saugstad (2005) conveys some of the distinctions between these forms of knowledge in the following terms: theoretical knowledge is produced by observing the world from outside; it does not require learning through experience; and 'activity is not directed towards an external end, but serves as an end in itself' (p. 355). The purpose of practical knowledge on the other hand, 'is to improve man's ability to produce and act in the practical world'; and it 'involves experience of particular life situations' (p. 355). Saugstad, however, goes on to emphasise that practical knowledge is not the same as pure experience-based knowledge in that 'Practical knowledge involves knowledge of both the general and the particular and of how to combine them' (p. 361).

Practical knowledge takes two forms: '*Techne* is the knowledge that deals with production and making. It is as systematic as it can be inside the realm of variation.

The activity form of *techne*, *poiesis*, is instrumental, as the goal lies outside the activity' (p. 355). *Phronesis*, the knowledge attached to ethical and social life, is 'experienced-based knowledge of the particularities, as it is connected to acting in particular situations. The activity form, *praxis*, is non-instrumental and consists of acting both appropriately and morally' (p. 356). To Dunne and Pendlebury (2007, p. 206) this means that practical reasoning is connected to consideration of collective wellbeing as well as the needs of the individual.

Aristotle's conception of theoretical knowledge has been critiqued by feminists who have argued that 'knowers must be taken into account in discussions of knowledge' (Thayer-Bacon 1999, p. 351). That is, the knower is not separate from knowledge (the known). Thayer-Bacon refers to Code in this respect saying that Code 'explores the need to pay as much attention to the nature and situation – the location – of knowers as ... to the known, thus introducing subjective factors that pertain to the circumstances of the subject' (p. 351).

Ruddick (1996) expands on the idea of situated knowledge in her discussion of relational knowledge. She says, 'we are construed in and by our relationships to others' (p. 262). These co-constituting relationships include our relationships with epistemic communities in which we participate – whether the communities form around the practices of family life, community life or the workplace. In summary Ruddick says, 'Reason arises in relationships, develops in practices, and speaks or is silenced within epistemic communities' (p. 266).

An issue that arises, however, when personal epistemology is conceptualised as co-constituted by factors such as family and culture is the role of the self in epistemological development. This drew my attention to the work of hermeneuticists who 'articulate a conception of human beings as, first and foremost, meaning-makers – self-interpreting beings who strive to make sense of themselves and the world' (Kirschner & Martin 2010, p. 9). Such a conception of human beings provides an interpretive framework that acknowledges the role of the self as well as social context in the emergence of an individual's personal epistemology (Freeman 2010; Kirschner & Martin 2010; Sugarman & Martin 2010).

Hermeneutics, moreover, not only suggests a concept of the self that is helpful to understanding personal epistemology and personal agency, it also informs the

methodology that I have developed to interpret the data collected for the study. This point will be developed in Chapter 3 Methodology.

Another critique of Aristotle is that his conception of knowledge focuses on ideas about reality rather than direct experience of reality. That is, according to Thayer-Bacon (1999), Aristotle argues that 'We can only know the material world through our ability to understand the form of material things, their essences' (p. 343). Aristotle's methodology for understanding the essences of material things was to use logical reasoning, what is known today as critical thinking, or to employ 'the scientific method, where we develop hypotheses, and then test these out' (p. 343).

A contrasting conception of knowledge is outlined by Benner (2000) who addresses 'the implications of an embodied, experiential view of agency' (p. 6). She contrasts what she terms 'the Cartesian subject' (p. 7) who mentally represents the known with an embodied subject who incarnates the known. This leads her to assert that 'Embodied capacities are not the same as the will or intellect, although they may draw on both' (p. 10).

Benner explores the idea of embodied knowledge in relation to *phronesis*. She describes embodied knowledge as a form of practical knowledge, 'a knowing how to interpret, that arises from those complex social interactions with others in which our responses generate a recognition by them and by us of what thoughts and feelings it is to which each is responding' (p. 12). Such knowledge is gleaned from 'Facial expressions, tone of voice, gestures and postures [that] allow persons to read another's responses and feelings' (p. 11). She goes on to comment that 'From a strictly rational-technical view of knowledge, such embodied knowing does not qualify as knowledge because it cannot be turned into formal propositions' (p. 12). Rather, reading the felt meanings of another is ambiguous and open to errors. To counter this point of view she points out that, 'the capacity for reading emotional states can be experientially learned and therefore can improve over time' (p. 12).

Dunne and Pendlebury (2007) also suggest the embodied quality of *techne* and practical reasoning which, they say has an 'inextinguishably experiential character' (p. 200). For Dunne and Pendlebury, practical reasoning integrates prior experience of similar situations, extensive knowledge of potentially relevant theory and practice, and the insight to flexibly interpret all these elements.

Polanyi (1969) also asserts the embodied and situated nature of knowledge saying, 'All thought is incarnate; it lives by the body and by the favour of society' (p. 134). As an example of embodied knowledge he says that visual perception illustrates how the body senses and interprets information in 'a combined skilful doing and knowing' (p. 127). That skilful understanding, moreover, is situated in the context of one's natural abilities, education and cultural background.

Polanyi (1969) also uses the metaphor of 'looking' and 'seeing' to illustrate his theory of knowledge that asserts two basic knowledge activities – looking at particulars and seeing the whole that the particulars comprise, even before all the particulars are specified. He says that there are two complementary efforts involved in the elucidation of a comprehensive entity. 'One proceeds from a recognition of a whole towards an identification of its particulars; the other, from the recognition of a group of presumed particulars towards the grasping of their relation in the whole' (p. 125).

Wertsch (1998) also addresses the whole and the parts and the situated nature of knowledge. He says, 'The task of a sociocultural approach is to explicate the relationships between human *action*, on the one hand, and the cultural, institutional, and historical contexts in which this action occurs, on the other' (p. 24). To carry out such a task, however, involves two apparently contradictory elements. First one must conceive of the phenomenon to be studied holistically in its inter-relation with its context. Simultaneously, however, it can be helpful to temporarily think of the phenomenon in terms of its constituent parts – not because the parts can be understood in isolation but because identifying the parts can be helpful in interpreting the phenomenon as a whole.

An example that Wertsch (1998, pp. 26-7) cites in support of his contention is that of pole vaulting – whilst pole vaulting as a phenomenon cannot be understood by considering the pole vaulter in isolation from the pole, one's understanding of the phenomenon may be enhanced by considering the strength and skill of the pole vaulter and the strength and flexibility of the pole separately in the process of analysis but ultimately the two components of the activity have to be understood in interaction.

The relevance of Wertsch and Polanyi to this study is that they both provide helpful conceptual tools for approaching an analysis of pre-existing theory in the field of personal epistemology and also for examining research materials generated in the course of the study. In both cases, the whole and its constituent parts must be

considered separately and as a whole. Polanyi (1969, p. 129) puts it this way, 'the alternation of analysis and integration progressively deepens both our insight into the meaning of a comprehensive entity in terms of its particulars and the meaning of these particulars in terms of their joint significance.'

A philosopher who draws together the themes of situated, relational, embodied and interpreted knowledge is Lorraine Code (2005) who has proposed an epistemology that draws on ecological thinking. Referring to the ecologist Rachel Carson, Code claims that Carson 'starts from an awareness that evidence may not speak for itself, either in its claims to count as evidence or in its meanings' (p. 93). Rather, Carson's interpretive approach is to discern 'patterns, regularities and irregularities, histories and influences, across specified habitats' (2005, p. 93). Equally importantly, interpretation is relational – it considers phenomena not as isolated happenings but as inter-related. Or to put it another way, Code's (2012) epistemology 'is grounded in experiences and practices, in the efficacy of dialogic negotiation and of action' (p. 98).

The relevance of this framework to my study is that Code emphasises the explanatory power of richly descriptive findings in particular cases rather than seeking to articulate findings as law-like statements. Such an approach does not diminish the value of research because 'conclusions are not random: often their explanatory power is in the analogies they suggest, from one location or set of patterns and processes to another; ... or irregularities in which disanalogies or imperfect analogies can be as illuminating as analogies themselves' (Code 2005, p. 95). This point is relevant to the study of personal epistemology where the ground breaking studies that established the field (Baxter Magolda 1992; Belenky et al. 1986; Perry 1970) were closely observed and richly descriptive accounts of the emergence of personal epistemology in particular settings.

This brief survey of some concepts from philosophy and from sociocultural psychology has a number of implications for the study. The concepts outlined inform my approach to methodology (see Chapter 3), alert me to different theories of knowledge that may underpin contrasting approaches to personal epistemology scholarship, and encourage me to be sensitive to different categories of knowledge and forms of reasoning that may appear amongst participants in the study.

2.2 Personal epistemology and its research traditions

The field of personal epistemology emerged from Perry's ground breaking study of the intellectual and ethical development of Harvard University students published in 1970. This highly generative work inspired a legion of subsequent researchers whose work Pintrich (2002) described as encompassing three research traditions: the developmental, cognitive and contextualist. Each of these research traditions, Pintrich argues, is underpinned by a different meta-theory – organismic, mechanistic or contextualist. For purposes of my research, however, I will argue for using the terms holistic, individuated and contextualist to describe each of the research traditions. Following the discussion of how to characterise the three traditions, I will provide an overview of each of the traditions.

Researchers in the holistic tradition attempt to understand the complex array of implicit assumptions about knowledge and knowing that influence the way in which individuals respond to and understand the world and their place in it. That is, these researchers focus on the meaning-making nature of personal epistemology. Inherent in their approach is the premise that for a researcher to understand a complex phenomenon he or she must simultaneously describe its rich detail and the way these details are woven together as a whole. In the case of personal epistemology, researchers in the holistic tradition assume that it is individuals in specific environments who are weaving together implicit assumptions about knowledge and knowing. Research findings are therefore reported in a way that illustrates the holistic, multi-faceted patterns of implicit assumptions about knowledge and knowing through which individuals view knowledge and understand the world. These are termed epistemological positions (Perry 1970), perspectives (Belenky et al. 1986) or phases (Baxter Magolda 1992, 2004).

Moreover, whether the overall phenomenon is described as an epistemological position, perspective or phase, researchers have described sub-patterns of assumptions about knowledge and knowing to which they assign names, for instance, the dualist position (Perry 1970), the received knowing perspective (Belenky et al. 1986), and the absolute knowing phase (Baxter Magolda 1992). These names, however, are not intended to imply that the positions, perspectives or phases are one dimensional phenomena. Up to this point, my understanding of this research tradition accords with Pintrich (2002) who says, 'the cognitive developmental models assume that epistemological thinking is more qualitative, organic, or holistic (the whole is

greater than the parts) and can't be broken down into independent components, at least not coherently' (p. 395).

My argument for using the term holistic rather than developmental, however, derives from the fact that not all researchers in the holistic tradition suggest that there is a developmental sequence in which the meaning making patterns of implicit assumptions about knowledge and knowing emerge. Goldberger (1996) and Tarule (1996), for instance, cast doubt on the developmental sequence of the epistemological perspectives that were identified in *Women's Ways of Knowing* (Belenky et al. 1986). Galotti and her colleagues also argue that the authors of *Women's Ways of Knowing* (WWK) describe five different epistemological perspectives but leave open the question 'as to whether and when the different perspectives formed any kind of developmental sequence' (Galotti et al. 1999, p. 746). In view of these reservations about whether there is necessarily a developmental sequence, I will use the term holistic rather than developmental to capture a key feature of the tradition which is concerned with a complex holistic approach to personal epistemology as meaning-making. This tradition is increasingly explicit about the importance of context in shaping personal epistemology.

The holistic approach to the study of personal epistemology was challenged by researchers such as Schommer (1990) who argued that personal epistemology was better conceived of as a series of beliefs about knowledge and learning that are held by individuals but that operate more or less independently. Pintrich (2002) termed this approach to personal epistemology as the cognitive approach but I argue for the use of the term individuated. Researchers in this tradition study and report their findings about personal epistemology in terms of separate beliefs that can be observed and described within a cohort or population but they do not necessarily report how individuals in that population draw elements of personal epistemology together into patterns. In this approach, the multiple beliefs about knowledge and learning held by individuals are measured and described separately and correlated with other psychological constructs that are being investigated. Individual cognitive beliefs may develop (Buehl & Alexander 2006) but development of multiple beliefs in relation to each other is not studied.

From my perspective then, the term individuated rather than cognitive better captures the key feature of this tradition which is concerned with conceptualising epistemological beliefs in a way which allows them to be investigated separately. Like the holistic

approach, the individuated approach is increasingly concerned to investigate the interrelationship of cultural context and epistemological beliefs.

More recently, both the holistic and individuated approaches to the study of personal epistemology have been challenged by researchers (Hammer & Elby 2003) who argue that the focus of study may more properly be the contexts in which people operate, and that serve to engage their epistemological resources, rather than to study either individual epistemological beliefs or the epistemological positions, perspectives or phases of individuals. Pintrich (2002) proposed the term contextualist to describe this approach to the study of personal epistemology.

2.2.1 Holistic school

This section briefly discusses the work of Perry (1970), Belenky et al (1986) and Baxter Magolda (1992, 2004). A more detailed analysis of the epistemological categories of Perry and Belenky et al. is deferred until section 2.3. The brief introduction to the work of each of the pioneers in the holistic school of personal epistemology is followed by a discussion of their later work where appropriate, the work of some of their closest collaborators and that of more recent exponents of the holistic approach to personal epistemology. In the context of surveying the work of each researcher some common themes are explored. These include the use of qualitative instruments such as interviews, the emphasis on a holistic conceptualisation of personal epistemology, and an emphasis on knowledge and knowing, mainly in educational settings, rather than on knowledge and learning. Differences within the holistic tradition are also considered. Differences include the researchers' views about the developmental nature of personal epistemology, the form of reasoning that they ascribe to participants in their studies, and whether or not the relationship between personal epistemology and context, especially cultural context, is explored.

2.2.1.1 Perry, his exponents and legacy

William Perry (1970) conducted longitudinal interviews at two prestigious universities in the United States of America during the 1950s and 1960s. The 140 students whom he interviewed for his study were mainly young, white, males with a record of academic achievement in high school. Specifically, of the 140 students interviewed, 112 were male and, with two exceptions, it was only the interviews with males that were used to illustrate or validate his study (p. 16). All the students were enrolled at elite colleges

(Harvard or Radcliffe), and aged 18 -21 years during the four years in which they were interviewed.

Perry's (1970) study involved two stages in data collection. In 1953-4, he administered a survey, the Checklist of Educational Views (CLEV), to 313 students to document students' educational experience in terms of their preference for dualistic, right-wrong thinking, or more qualified, relativistic and contingent thinking (p. 7). Subsequently, he interviewed 31 students, starting with the question, 'Would you like to say what has stood out for you in the year?' On the basis of these interviews, he identified a common sequence of challenges that appeared to confront students during their liberal arts education and in 1959 embarked on a larger interview study of 109 students to report on what seemed to be a developmental scheme of student responses to the challenge of diversity in academic and social life (p. 8).

The crux of Perry's work was an exploration of the impact on students of their encounter with uncertainty during the course of their college years. Initially, he hypothesized that differences among students may reflect differences in personality. But his research led him to describe an evolution in the forms in which students construed their experience: 'These "forms" characterize the structures which the students implicitly or explicitly impute to the world, especially those structures in which they construe the nature and origins of knowledge, of value, and of responsibility' (Perry 1970, p. 1). That is, Perry traced how the students' encounter with uncertainty changed not only their assumptions about knowledge but their assumptions about themselves as knowers and meaning makers. He conveyed these changes through describing a developmental scheme comprising nine epistemological Positions.

Perry's Positions are summarised below using Perry's convention of capitalising Positions, Authority (in early Positions) and Commitment (in later Positions). In the summary I group Perry's Positions 1-3 into one category, dualism, on the basis that the three Positions assume that external authority is the source of definitive knowledge. I also group Perry's Positions 6-9 into one category, committed relativism, on the basis that in all four positions knowledge is evaluated in the context of personal relevance. The remaining Perry Positions are considered individually.

- Position 1 is where the student sees the world in polar terms of we-right-good vs other-wrong-bad. Right answers for everything exist in the Absolute, known to Authority whose role is to mediate (teach) them. Knowledge and goodness are perceived as quantitative accretions of discrete rightnesses to be collected by hard

work and obedience (Perry, 1970, p.9). In Positions 2 and 3, the basic dualism is maintained but students perceive a loosening of the 'tie between Authority and the Absolute' (Perry 1981, p. 83)

- Positions 4(a) and 4(b) are differentiated by Perry (1970). Position 4(a) is where the student perceives legitimate uncertainty (and therefore diversity of opinion) to be extensive and begins to assume an unstructured epistemological realm in which "anyone has a right to his own opinion." A realm which the student juxtaposes to Authority's realm where opinions are either right or wrong. Alternatively, in Position 4(b) the student discovers qualitative contextual relativistic reasoning as a special case of "what They want" within Authority's realm (p.9).
- Position 5 (relativism diffuse) is a watershed phase where the student perceives all knowledge and values (including Authority's) as contextual and relativistic (Perry 1970, pp. 9-10). Relativism provides wide opportunity for the exercise of reason because it inherently involves opportunities to compare one context with another (p.135). But initially relativism is characterized by vagueness or lack of focus (p.115).
- In Positions 6-9 students orient themselves in a relativistic world through some form of personal Commitment –as distinct from unquestioned or unconsidered commitment to simple belief in certainty (Perry 1970, p. 10). This requires the capacity to stand back from oneself and review opinions or assumptions (p. 35). It involves 'some decision, some choice among actions, values or meaning which comes from themselves and defines them as individuals' (p. 34).

From the perspective of my research then, Perry's significance is that he demonstrated that the abstract structural aspects of knowing and valuing (construal of knowledge rather than content of knowledge) can be inferred from interviews. In his scheme he then traced the abstract structural aspects of knowing in terms of contextual configuration rather than linear increment (Perry 1970, p. 14). That is, he identified the way that individuals draw aspects of knowing together in different patterns (Positions) in order to make meaning. These patterns of meaning making are at the core of the holistic approach to understanding personal epistemology. In contrast, the individuated school has focused on consideration of discrete aspects of knowing that they conceive of as beliefs.

Perry's rich research triggered decades of subsequent research not only because his theoretical conceptualization laid the basis for the field of personal epistemology but also because of the implications of his observations for tertiary education. He argued that, 'When a teacher asks his students to read conflicting authorities and then asks them to assess the nature and meaning of the conflict, he is in a strong position to assist them to go beyond simple diversity into the disciplines of relativity of thought' (Perry 1970, p. 35). Many subsequent researchers, therefore, explored the application of Perry's ideas to formal education and to education for civic participation such as jury

membership. In addition subsequent research has explored the relationship between personal epistemology and factors such as gender and culture both in educational settings and beyond.

Knefelkamp was a key Perry collaborator who focused on the elaboration and application of the Perry Scheme. In her introduction to the 1999 edition of Perry's seminal work she outlined the origins of Perry's Scheme, its main features and how it can be understood in light of later research. She emphasised its grounded, qualitative character created through listening to many student voices (Knefelkamp 1999, p. xiv) and suggested that Perry's positions form part of a flexible developmental model in that Perry recognised that students could be in several different positions at once (p. xii) and that their epistemological assumptions emerged in specific contexts.

Knefelkamp, along with her colleague Carol Widick, developed the Measure of Intellectual Development (MID) a production task designed as an alternative to interviews for gathering data on general and domain-specific intellectual development (Knefelkamp 1974, pp. 230-41). The MID involves students writing essays about learning environments, decision making, and specific academic subjects. To facilitate use of the MID, Knefelkamp then developed an extensive rating manual so that trained raters could read the essays for statement, phrases, or perspectives that are associated with each of Perry's holistic epistemological positions and make a judgment of the position or developmental transition represented (p. 242). Knefelkamp and Cornfield (1979) also developed an elaborated chart detailing the characteristics of students in Positions 2 through 5 and identifying how eight crucial variables change as students' epistemologies become more complex (Knefelkamp 1999, p. xviii). Into the 1990s, according to Knefelkamp, the Perry Interview, MID, and Moore's Learning Environment Preferences (LEP) survey (see below) continued to be used extensively by researchers (Knefelkamp 1999, p. xvii).

Moore is also an influential interpreter of Perry who has argued that Perry's developmental scheme comprises two parts. He says that 'Positions 1 through 5 describe the primarily intellectual portion of the scheme: systematic, structural change toward increasing differentiation and complexity' (Moore 2002, p. 19). In Positions 6 through 9, however, 'the primary focus of the journey shifts to what Perry calls ethical concerns in the classical Greek sense of issues of identity and commitments in a relativistic world' (pp. 19-20). Within this overall differentiation of the Scheme, Moore identifies four major groupings of epistemological positions. These are: Dualism,

Positions 1 and 2; Multiplicity, Positions 3 and 4; Contextual Relativism, Position 5 and beyond; and Commitment within Relativism, Positions 6 to 9 (pp. 20-1). Moore also engages with the debate on the developmental assumptions of Perry's Scheme, asserting that Perry came to see epistemological development as recursive, placing more emphasis in later years on retreat, escape (akin to alienation), and temporizing (p. 23).

According to Knefelkamp, Moore is the developer of the most widely used "paper and pencil" measure of the Perry Scheme, the Learning Environments Preference (LEP) survey (Knefelkamp 1999, p. xvii). This recognition task survey asks students to select from a list the items that most reflect their thinking about learning, the role of the instructor, evaluation, the role of peers, and the nature of knowledge. Moore (1989, p. 505) explains that the LEP survey is derived from the MID essays and responses to the sentence stems included in Baxter Magolda's Measure of Epistemological Reflection (MER) which is discussed in section 2.2.1.3. Moore (1989, p. 504) describes the LEP as a solid, heuristic, objective instrument assessing the Perry scheme.

King and Kitchener conducted studies in America for over a quarter of a century from 1981 to further enrich our understanding of Perry's epistemological positions (King & Kitchener 2004). Their seven stage Reflective Judgment Model (RJM) 'describes a developmental progression that occurs between childhood and adulthood in the ways that people understand the process of knowing and the certainty of knowledge claims and in the corresponding ways that they justify their beliefs' (King 2000, p. 16). The RJM can be summarised into three overarching categories (King 2000, pp. 20-1): pre-reflective thinking (Stages 1, 2, 3); quasi-reflective thinking (Stages 4 & 5); and reflective thinking (Stages 6 & 7). King and Kitchener's initial work was grounded in the cognitive-developmental tradition of Piaget and Kohlberg but their later work was also influenced by constructive-developmental perspectives. That is, they came to endorse Rest's concept of a complex rather than a simple stage model of development (King & Kitchener 2004, p. 9) and to draw on Fischer's skill theory that posits that factors such as practice, familiarity, and memory requirements affect cognitive performance (Fischer 1987, p. 627). Consequently, King and Kitchener (2004, p. 11) explained, no skills exist independent of the environment and that the skill levels a person demonstrates will vary depending on the conditions under which they are assessed. In other words, King and Kitchener came to see the RJM as indicative of a knower's epistemological beliefs rather than as a definitive statement of the knower's stage of reflective judgment.

King and Kitchener's method of developing the Reflective Judgment Model (RJM) was to pose ill-structured problems to study participants during Reflective Judgment Interviews (RJI) and then to record how the participants responded to probing questions designed to explore their fundamental assumptions concerning 'knowledge, how it is gained, how they decide what to believe' (King & Kitchener 2004, p. 12). They define ill-structured problems as those involving 'controversy or doubt about a problem that cannot be answered by formal logic alone, and involves careful consideration of one's beliefs in light of supporting evidence' (King & Kitchener 1994, p. 6). Whilst King and Kitchener's research has been conducted in the USA, their model has been used as the basis of research in other cultural contexts, for instance, Scotland (MacLellan & Soden 2004).

Kuhn extended the understanding of personal epistemology by examining how epistemological awareness is a part of thinking and reasoning processes that people 'are likely to have occasion to think and talk about in their own everyday experience' (Kuhn 1991, p. 264). Her original research involved interviews with 160 participants drawn from four age groups and balanced for gender and college and non-college educational level (p. 18). In the interviews she posed problems that were 'ill-structured' meaning that there were 'no definitively correct answers' (p. 10). Instead, the number and types of responses were open-ended, and the information an individual could bring to bear on the problem was similarly unconstrained. For instance participants were asked to generate causal explanations for three social problems, including 'What causes prisoners to return to crime after they're released?' (p. 16). Kuhn concluded from this research that argumentative reasoning ability does not differ with sex or age but 'participants having more education consistently outperform those of lesser educational level' (p. 289).

A second stage of Kuhn's study examined participants' reasoning in regards to a scenario involving juror reasoning (Kuhn, Weinstock & Flaton 1994). Across the two phases of the study Kuhn and her colleagues were able to identify patterns in participants' analyses of social issues and their responses to simulated juror scenarios. For instance, participants who saw complex questions, such as why prisoners return to crime, as having single, certain answers also often conceived of the juror task as identifying a single, certain truth, rather than as weighing alternatives whose truth can never be known with certainty (p. 293). This supports Kuhn's assertion that argumentative reasoning and epistemology are related.

Although the primary purpose of Kuhn's original study was to investigate argumentative thinking, and juror reasoning, a portion of the study focused specifically on epistemological understanding in that it posed questions regarding *proof*, *expertise*, *multiple points of view*, *origins of theories* and *certainty* of knowledge (Kuhn 1991, pp. 172-3). Based on these questions, the research identified three levels of epistemological understanding: absolutist, multiplist and evaluativist (Kuhn 1992, p. 167). Subsequently, influenced by research on intellectual development in children, Kuhn has also proposed a realist level of epistemological understanding that precedes the absolutist level and views assertions as copies of a certain, external reality which is directly knowable (Kuhn 1999, p. 23).

Kuhn and her colleagues have also proposed that the developmental impetus driving epistemology and critical thinking is a meta-cognitive process which involves the coordination of the subjective and objective dimensions of knowing. This, they asserted, is the essence of what develops in the attainment of mature epistemological understanding. 'Initially, the objective dimension dominates, to the exclusion of subjectivity; subsequently, the subjective dimension assumes an ascendant position and the objective is abandoned, and, finally, the two are coordinated' (Kuhn, Cheney & Weinstock 2000, p. 310). Kuhn and her colleagues also postulated, however, that the trajectory of epistemological understanding develops at different rates in the different knowledge domains of taste, aesthetics, ethics and social and physical reality.

To explore this hypothesis they developed the Epistemological Thinking Assessment (ETA). The ETA asks whether it is possible to judge whether one account is more correct than the other when presented with competing accounts in each of five broad domains. The conceptual basis of the tool is that 'people's epistemological beliefs come into play when they are confronted with uncertain, discrepant knowledge claims' (Tabak & Weinstock 2008, p. 180). Participant responses are categorised as absolutist (where one knowledge statement is considered right and the other wrong), multiplist (where both statements are considered equally right) and evaluativist (where both are considered right to a degree, but one may be determined to be more right). On the basis of this research they demonstrated that epistemological understanding develops at different rates in different knowledge domains.

The ETA has since been widely used as a paper and pencil instrument for epistemological research, including in a study to explore the relationship between culture and personal epistemology. Kuhn and Park (2005), for instance, studied three

groups of mothers and children drawn from Caucasian, Chinese American and Korean American backgrounds using the ETA. They found that epistemological levels are related to the cultural valuing of engagement in difficult questions with uncertain answers. Moreover, they found cultural differences in such intellectual values as well as in the related epistemological levels.

Kuhn's research has also been influential in that the categories of epistemological understanding that she identified – absolutist, multiplist and evaluativist – have been used by other researchers as a basis for describing categories of epistemological understanding in their own research (Brownlee & Berthelsen 2008; Weinstock & Zviling-Beiser 2009).

Weinstock has collaborated extensively with Kuhn and others to explore the developmental trajectory of personal epistemology (Kuhn, Cheney & Weinstock 2000) and reasoning in everyday situations (Weinstock, Neuman & Tabak 2004). He has also explored the relationship between personal epistemology and culture (Tabak & Weinstock 2008; Weinstock 2010) and the contribution of social experiences as opposed to educational experiences on the development of personal epistemology (Weinstock & Zviling-Beiser 2009). These studies have been underpinned by developmental assumptions articulated by Kuhn and using the ETA to present survey participants with discrepant knowledge claims. Responses have been assessed (Weinstock & Zviling-Beiser 2009, p. 291) as absolutist, multiplist or evaluativist.

In a study that focused on culture and epistemology, for instance, Tabak and Weinstock (2008) extend the use of the ETA to a study of epistemological beliefs among three groups of Israeli students: Bedouin Arabs; Jewish students at a science-focussed secondary school; and Jewish students at a religious school. They found that 'With the exception of a general trend away from absolutism toward relativism in adolescents, the samples displayed unique patterns of epistemological positions across grades, gender, and domains' (p. 184). This divergence from the findings of earlier research using the instrument prompted Tabak and Weinstock to consider what gives rise to epistemological understandings. They concluded that rather than simple age-related or general school-related developments being implicated, 'we suspect that sociocultural factors come to play in what appears to be epistemic socialization. That is, school and community values and practices would seem to influence what positions toward knowledge are desirable or acceptable' (p. 184). Here, the authors are suggesting that sociocultural factors may affect the end point that is assumed to be

desirable in epistemological stances. In the light of this possibility Weinstock questions whether the ETA can capture 'what is essentially a different epistemology' (2010, p. 127). In raising this question Weinstock is identifying an on-going challenge to epistemology research.

Chandler and colleagues can be described as being influenced by Perry's use of interviews and his conceptualisation of epistemological positions as emerging in response to uncertainty. To investigate this proposition they conducted Epistemic Doubt Interviews to explore responses to discrepant knowledge claims. As a result they reconceptualised Perry's nine epistemological positions into four basic epistemic stances: realism, dogmatism, skepticism and rationalism (Boyes & Chandler 1992, p. 283). Realism is characterized by the belief that knowledge is the automatic by-product of exposure to the 'raw facts of experience' (p. 283); dogmatism is where individuals make a leap of faith, asserting that 'omniscient authority' knows the right answers (p. 285); skepticism is where individuals take the opposite approach and embrace 'unbridled relativism' maintaining that every opinion is just as good as any other (p. 285); and rationalism is a commitment to the possibility that some propositions can be shown to have 'better legs to stand on than do others' (p. 285).

Subsequent research using the Epistemic Doubt Questionnaire (EDQ) led to the reformulation of the categories of epistemic stance as: objectivism, skepticism and rationalism (2002, p. 296). Objectivism is a sense of certainty that does not distinguish between certainty based on the realist's assertion that truth is self-evident and certainty based on dogmatic adherence to a particular interpretation of reality despite awareness of uncertainty. The reason for combining the two categories of realism and dogmatism is that a paper and pencil instrument does not allow the distinction to be captured (p. 296).

Using the EDQ, Hallett and colleagues (2002) set out to address research showing that awareness of the interpretative nature of truth can be found at varying ages. They argue that this is not a result of different dimensions of personal epistemology developing at different ages. Instead they argue that there are coherent stages of epistemic development but these develop at different rates regarding 'institutional' and 'brute' facts. Institutional facts are views derived from authorities such as family and religion and brute facts are views debated in the disciplines of formal education. Their findings regarding differential rates of epistemic development are consistent with research showing that epistemic development varies by domain (Kuhn, Cheney &

Weinstock 2000). Like Kuhn et al.'s research, however, Hallett and colleagues are subject to the critique that their instrument can measure reasoning patterns consistent with their hypothesis but is not well designed for revealing entirely different approaches to addressing disputed knowledge claims.

Zhang has been influenced by Perry's epistemological categories but she has not used interviews in her research. Instead, she has developed the Zhang Cognitive Development Inventory (Zhang 2002), a self-report test, composed of 75 statements that assess three levels of cognitive development (dualism, relativism, and commitment), as defined in Perry's theory (1970). Zhang (2002) writes that the items on the scale span two content areas: education and interpersonal relationships. 'An *education* item assesses the participants' way of reasoning in learning situations. An *interpersonal relationship* item assesses the participants' way of reasoning in social situations' (p. 185). Zhang has used the Inventory in research with American and Chinese university students to explore the relationship between students' thinking styles (e.g. executive or judicial) and cognitive development (dualistic or relativistic). In other words, like many other holistic personal epistemology researchers she is interested in reasoning and personal epistemology.

It can be seen, then, that the work of Perry and many of his influential interpreters has been characterised by both interviews and paper and pencil instruments and by an emphasis on modes of reasoning, especially critical thinking. There has also been an emphasis on a developmental trajectory to personal epistemology albeit with recognition that development is not always linear, uninterrupted or inflexible and may vary by domain. There is also an increasing awareness of the need to explore the relationship between culture and personal epistemology.

2.2.1.2 Belenky, Clinchy, Goldberger and Tarule – WWK and beyond

In *Women's Ways of Knowing* (WWK) Mary Belenky, Blythe Clinchy, Nancy Goldberger and Jill Tarule (1986) describe five primary epistemological perspectives drawn from interviews with 135 women in the USA in the 1970s and 1980s. The authors selected the participants for their study to represent a different cohort to those studied by Perry. Not only were all of their participants women but they were also drawn from a variety of educational backgrounds. Two thirds of the participants attended or had recently graduated from educational institutions that included a prestigious women's college (Wellesley), other well established colleges, a community college and two programs providing education for high school age students. One third

of participants were attending parenting programs offered by social service agencies (p. 12).

Their study was not preceded by a survey or production task because the authors shared Perry's commitment to a phenomenological approach that is 'built around an open and leisurely interview that establishes rapport and allows presuppositions and frames of reference of the interviewee to emerge' (p. 10).

The five primary epistemological perspectives that were described in WWK were later summarised as:

(1) silenced knowing, where people think of themselves as generally mindless, voiceless, and unable to learn from others or figure things out for themselves; (2) received knowing, where people equate learning with passively receiving and storing information, with dualistic notions of truth and knowledge that are to be passed from expert to novice; (3) subjective knowing, where knowledge and truth are conceived as highly personal, private, and essentially incommunicable, and as such cannot be shared, evaluated, or developed with others; (4) procedural knowing, where people envision that knowledge and truth can be developed, identified, evaluated and communicated using systematic procedures, and (5) constructed knowing, where people conceive that knowledge and truth are constructions of humankind and, as such are dynamic, contextual, and evolving. (Bond, L, Belenky & Weinstock 2000, p. 710)

From the perspective of my research Belenky et al.'s (1986) significance is twofold. Firstly, the WWK conception of personal epistemology is more explicitly agentic and relational than Perry's. That is, as Clinchy (2002) says, 'Perry's positions are defined mainly in terms of the nature of knowledge and truth (truth is absolute, for example, versus multiple), whereas we stress the women's relation to knowledge and truth, their conceptions of themselves as knowers' (2002, p. 64). This conception of personal epistemology is consistent with the epistemological framework that I bring to the study as outlined in Section 2.1. Secondly, Belenky et al.'s significance is that by interviewing women rather than men, and women from a more diverse range of educational backgrounds than Perry investigated, Belenky et al. revealed epistemological perspectives not apparent amongst Perry's cohort. In this way they demonstrated the relevance of holistic personal epistemology to a wide range of research situations, including that of the current study, which focuses on non-traditional

entrants to tertiary education. They also provided a challenge to the developmental assumptions of earlier holistic research into personal epistemology in that subjective knowing does not fit neatly into a developmental scheme such as Perry's. Differences between Perry's Positions and Belenky et al.'s perspectives will be explored in greater detail in Section 2.3.

With respect to whether epistemological positions or perspectives form part of a developmental sequence, however, the four authors of WWK do not share a common interpretation of their findings. As already mentioned, Belenky and her colleagues Bond and Weinstock (Bond, Belenky, and Weinstock, 2000, p.710), suggest that the five WWK epistemological perspectives, with the exception of silenced knowing, emerge in a relatively developmental sequence within western technological society. Their view about the developmental sequence of the WWK perspectives, however, is not shared by Clinchy, who writing with her colleagues Galotti, Ainsworth, Lavin and Mansfield (Galotti et al. 1999, p. 746), says that WWK left open the question as to whether and when the different perspectives formed any kind of developmental sequence. Goldberger (1996), on the other hand, argues that whilst WWK did suggest a developmental trajectory for personal epistemology, she subsequently rejected this concept, stating that epistemological perspectives are not so much developmental but contextual '*strategies* for knowing (rather than person types)' (p. 362). Thus persons may deploy different strategies for knowing in different situations. Tarule (1996, p. 285) also reinterprets the WWK epistemological perspectives not as developmental positions but products of *interpretative communities* in which the capacity to think mirrors the quality of the discourse in those communities. Compared then to Perry who was clear about the developmental nature of personal epistemology, the WWK authors have divergent views on the subject.

Subsequent research by WWK authors

Clinchy, who is one of the WWK authors, has subsequently further explored the concepts of connected and separate knowing that were described in WWK. She contributed to the development of a measure of connected and separate knowing (Galotti et al. 1999), the Attitudes to Teaching and Learning Survey (ATTLS), but her substantive work has been on theorising the nature of connected knowing and its relationship with subjective, procedural and constructed knowing.

In her discussion of procedural knowing and its two modes – connected and separate knowing – she emphasised the deliberative and narrative qualities of connected

knowing (Clinchy 2000). Later (2007a) she suggested that a narrative quality may also be characteristic of subjective knowing, albeit without the reflective quality that is found in connected knowing. That is, Clinchy says they are both 'attuned to narratives of personal experience, rather than "impersonal" arguments' (p. 21). Moreover, she argues that constructed knowers share the penchant for narrative thinking but take responsibility for making and acting upon their own judgments (p. 27). By emphasising judgment, Clinchy is drawing attention to meaning and interpretation rather than evaluation as the driving force of connected and constructed knowing.

In a challenge to Kuhn, Cheney and Weinstock (2000) who conceptualise evaluative thinking as the integration of the objective and subjective, Clinchy (2007b) developed the notion of personal knowledge and commitment as transcending the disjunction between subjective and objective. Clinchy argued that "'connected knowing" (a personal approach) is not simply equal to "separate knowing" (a detached, impersonal mode) as a procedure for arriving at knowledge, but is prior to it, "making meaning" being a necessary prerequisite to testing the validity of a position' (p. 54). In this way, Clinchy also moved beyond the theoretical thinking in WWK about connected knowing and separate knowing being parallel procedures for understanding.

Belenky, who is another WWK author, has focussed her subsequent research on the elaboration and application of WWK epistemological perspectives, focussing particularly on received knowing and silence, or in her rendering, silenced knowing (Bond, L, Belenky & Weinstock 2000, p. 710). For instance, with her colleagues Bond and Weinstock, she contributed to the development, delivery and evaluation of education interventions aimed at supporting epistemological development among mostly 'poor, rural, isolated, young, White mothers' (p. 697) participating in parenting programs. The design, delivery and evaluation of the Listening Partners project drew extensively on WWK. It was intended as an intervention to support epistemological development amongst silenced and received knowers. Participants were interviewed prior to and after the program using an elaboration of Belenky et al.'s WWK Interview (1986, pp. 234-5). Interviews were analysed using seventeen codes derived from WWK epistemological positions. Findings from the evaluation of the project demonstrated that women who entered the program with silenced or received knowing perspectives showed epistemological change and revealed predicted intervention effects (Bond, L, Belenky & Weinstock 2000, p. 715). In 2006, Bond and Burns extended the earlier study to examine the relationship between mothers' beliefs about the nature of knowledge (epistemology) and child development and parent-child

communication strategies (Bond, L & Burns 2006, p. 556).

Goldberger, a third WWK author, has subsequently focussed on the exploration of personal epistemology in varying cultural contexts, especially among bicultural Americans. Her work has included a consideration of how the five WWK epistemological perspectives may appear in different cultural settings and an assertion of the importance of understanding the way in which personal epistemology is co-constituted by culture and power. Some of the variations on the WWK perspectives that she identified among bicultural Americans included revisiting the concept of received knowing (Goldberger 1996, p. 347) to allow for different ways in which authority or God may be construed. In the case of Afro Americans, for instance, she said, 'God is experienced as "in me"' (not external)' (p. 348); and hence the relationship to God is not about receiving direction but about co-authoring action. As regards subjective knowing she said that among bicultural Americans with a Native American heritage this form of knowledge could have parallels with 'nonpropositional embodied knowledge' (p. 352). Her research also revealed bicultural Americans for whom constructed knowing entailed flexibility and an ability to assess the appropriateness and utility of a particular way of knowing given the moment, situation, and cultural and political imperatives. (p. 357). This rendering of constructed knowing has connotations of practical reasoning as described by Dunne and Pendlebury (2007).

Tarule, the fourth WWK author, has subsequently researched the construction of meaning through interaction and dialogue and hence emphasised collaborative learning; that is, 'experimenting with and examining new ways to construct classrooms as discourse and interpretive communities, inviting students and teachers to engage in what educational theorist Paulo Freire (Freire & Macedo, 1995) has called "dialogic meaning making"' (Tarule 1996, p. 290). Tarule (1996) re-visits the WWK interviews and suggests that epistemological perspectives are not individually held developmental positions but products of '*interpretative communities*' in which 'the capacity to think mirrors the quality of the discourse in those communities' (p. 285). Underpinning this change in interpretation is an emphasis on how thinking and knowledge are mediated through interaction with others. In this way, Tarule reflects Vygotsky's view that 'thinking and knowledge are mediated through interaction with others' (p. 277) rather than Piaget's emphasis on the individual's interaction with the objective world as the driver of cognitive development. In this context she reinterprets the WWK perspectives as developing through conversations. For instance, for silent and received knowers there is no explicit conversation, for subjective knowers direct sensory experience is often explored through conversation, and for procedural knowers conversation can be connected or separate.

The work of WWK authors collectively, individually and with collaborators provides rich insights into personal epistemology. The research encompasses both interviews and paper and pencil instruments and engages with modes of reasoning including, but not restricted to, critical thinking. Not all of these researchers subscribe to a developmental view of personal epistemology and Goldberger has researched the relationship between personal epistemology and culture.

2.2.1.3 Baxter Magolda, her exponents and legacy

Baxter Magolda's concept of epistemological reflection (Baxter Magolda 2004) emerged from a longitudinal interview study spanning sixteen years (p. 31) in which she traced the development of personal epistemology in a group of mainly white Americans (p. 42), aged 18–34 (p. 31) who attended a selective liberal arts college (p. 42). The study began in 1986 with 101 first-year college students, including three students of color (p. 33). The inclusion of 51 women and 50 men in the study (p. 33) facilitated an exploration of gender and personal epistemology. By the fourth year of the study, participants were aged 21 meaning that during the last twelve years of the study, participants were aged 22 – 34 years. By the final year of the study, there were

30 participants in the sample, 18 women and 12 men, all Caucasian (Baxter Magolda, Creamer & Meszaros 2010, p. 26). The study took the form of annual interviews of 60-90 minute duration (Baxter Magolda 2004, p. 33).

Prior to her longitudinal interview study, Baxter Magolda administered a purpose designed production task to 1117 students at an American mid-western university 'to assess intellectual development across the first five positions of the Perry scheme' (Baxter Magolda 1987, p. 49). The MER comprised short answer essay questions about the nature of knowledge and the role of instructors, learners, peers, evaluation and decision-making in learning. Essay responses were scored using a rating manual containing statements representative of the five Perry positions for each of the essay topics. Subsequently, she noted the similarities and differences between the Perry (1970) scheme and the epistemological perspectives identified by Belenky et al (1986). As a result, Baxter Magolda designed her longitudinal study to explore gender differences in ways of knowing (1992, p. 8) and used the MER to code the initial interviews conducted for the longitudinal study (Baxter Magolda 2004, p. 33).

Based on her initial research, Baxter Magolda conceptualised the Epistemological Reflection (ER) model (Baxter Magolda 2004, p. 39) in terms of four sequential phases of cognitive development where external authorities are relied on to manage uncertainty. In the first three phases - absolute knowing, transitional knowing and independent knowing - gender differences in the patterns that knowers adopt in relation to learning are apparent but otherwise the assumptions about the nature of knowledge and knowing are similar to Perry's dualism, multiplicity and relativism diffuse. In the fourth phase, contextual knowing, gender related patterns are integrated as knowers operate from the belief that knowledge exists in a context and is judged on evidence related to the context. This phase is similar to procedural knowing in Belenky et al., but Baxter Magolda does not separate out two patterns equivalent to separate and connected knowing (Baxter Magolda 2004, pp. 34-8).

The potential for constructivist thought that contextual knowing implies, however, requires confronting a 'cross roads' where there is a challenge to one's dependence on external authority to manage uncertainty. This is similar to the epistemological challenge faced by Perry's committed relativists and Belenky et al.'s constructed knowers. For Baxter Magolda, however, at the 'cross roads' other developmental dimensions (e.g. identity and relationships) mediate intellectual development (Baxter Magolda 2004). That is, there is an intertwining of developmental dimensions - the

cognitive 'how do I know?', the intrapersonal 'who am I?', and the interpersonal 'what kinds of relationships do I want?' (pp. 38-9). In her theorising about the links between personal epistemology and identity, Baxter Magolda (2010) goes beyond the scope of the current study.

It is significant, however, that, in the interviews Baxter Magolda conducted in the post-college years, she abandoned her earlier theoretical assumption that development is a gradual process, naturally unfolding in logical sequence. Instead she wrote, 'I now view existing developmental models as descriptions of how contexts have shaped young adults (in interaction with young adults' current meaning-making) rather than as descriptions of what is possible in terms of developmental growth' (Baxter Magolda 2004, p. 39). That is, there is a shift in Baxter Magolda's thinking away from a developmental trajectory to an emphasis on context, including environmental challenges, as a driver for shifting the balance of internal and external voices in meaning-making. This represents a constructivist developmental approach to the nature of meaning-making in which development is an overarching, flexible continuum mediated by individuals in a sociocultural context (Baxter Magolda & King 2012). This aspect of her theorising then is relevant to my study and consistent with my argument that researchers in the holistic school of personal epistemology do not all subscribe to a simple developmental approach.

Pizzolato built on the work of Baxter Magolda by using semi-structured interviews with a diverse sample of high risk college students (Pizzolato 2003). She confirmed Baxter Magolda's assertion that environmental challenges provide the context for the emergence of self-authorship. In Pizzolato's formulation, self-authorship requires: provocative experiences, student willingness to cognitively engage in the self-authoring process, and scaffolding from others, i.e. self-authoring requires both external influence and internal processing (2003). Importantly Pizzolato showed that self-authored behaviour may be discouraged by threatening or hostile environments. She wrote that whether students can act in self-authored ways 'may then depend on both their ability to reason, and their perception of support for self-authored action. Support here means a student may need to perceive that the cost of acting in self-authored ways does not outweigh the benefits' (Pizzolato 2004, p. 439). This conclusion is consistent with Baxter Magolda's constructivist developmental approach.

2.2.1.4 Additional voices

In this section I discuss some researchers whose approach to personal epistemology is holistic but who cannot be neatly described in terms of the legacy of a single pioneer in the field of personal epistemology.

Brownlee and colleagues: In Australia, Brownlee and her colleagues (Berthelsen, Brownlee & Boulton-Lewis 2002; Brownlee 2003, 2004; Brownlee & Berthelsen 2008; Brownlee, Berthelsen & Boulton-Lewis 2010; Walker et al. 2012) have used qualitative methods such as phenomenologically inspired longitudinal interviews, scenario-based interviews, and analysis of reflective journals but the Epistemological Beliefs Survey (EBS) has also been used as a quantitative measure to trace participants' epistemological beliefs over time. Apart from the analysis of the EBS findings which reported epistemological beliefs separately, this group of researchers report epistemological beliefs holistically. Data analysis has been both inductive and deductive drawing on well-established categories such as Belenky et al's received, subjective, and constructed knowing (Brownlee 2003); or categories informed by Kuhn such as Objectivist, Subjectivist, Evaluative (Brownlee & Berthelsen 2008; Brownlee, Berthelsen & Boulton-Lewis 2010). A particular focus of their research has been to explore the interface of theories of personal epistemology and relational approaches to teaching and to propose a social constructionist understanding of the development of personal epistemology. Their research, however, has been critiqued by Billett (2009) as not giving sufficient emphasis to how personal epistemology is shaped and re-shaped by experience.

A particular feature of the work of Brownlee and her colleagues that is pertinent to the current study is that they have reported on the personal epistemologies of people with diverse educational backgrounds. As regards people with tertiary experience, Brownlee and her colleagues have reported on students and educators working in or training for roles in preschool and primary and secondary school settings (Berthelsen, Brownlee & Boulton-Lewis 2002; Brownlee 2003, 2004; Brownlee & Berthelsen 2008; Brownlee, Berthelsen & Boulton-Lewis 2010; Walker et al. 2012). They have also studied the personal epistemology of adults outside a university context who have experience in vocational education and training (VET) (Berthelsen, D, Brownlee, J & Boulton-Lewis, G 2002; Brownlee, Berthelsen, Dunbar, Boulton-Lewis and McGahey, 2008; Brownlee, J, Berthelsen, D & Boulton-Lewis, G 2010). Their 2010 study, for instance, reported on 47 vocational education students enrolled in a Diploma of Children's Services in

Australia. Their participants were similar to the participants in the current study in that 91% of the participants in the study by Brownlee and her colleagues were female, 68% had completed secondary education, 81% were younger than 25 and none were reported as gaining entrance to a Bachelor degree on the basis of their secondary schooling. The main difference to the cohort in the current study is that no speakers of English as a Second Language (ESL) were reported. The findings of this study diverged from earlier epistemological categories in that they discerned a group of complex evaluativists and a group of practical evaluativists (Brownlee, J, Berthelsen, D & Boulton-Lewis, G 2010. p 103). This distinction had not emerged in the earlier work of Perry, Belenky et al. or Baxter Magolda.

Gottlieb's research amongst primary and secondary school students in Israel who attend religious or general schools was intended to tease out the influence of cultural setting, age and level of schooling on epistemological development (Gottlieb 2007). The interview protocol used in the study was an adaptation of the protocols used by Kuhn (1992) and King and Kitchener (2004). Significantly, however, the topics to be explored in the interview were not restricted to controversial social issues but also included a question that directly tapped religious belief. That is, whether to believe in God (Gottlieb 2007, p. 11). When it came to analysing the interviews, Gottlieb's inductive approach revealed that the epistemological dimensions (Hofer & Pintrich 1997) and categories (Kuhn, Cheney & Weinstock 2000) identified in earlier research were not relevant to the study. Rather, students' assumptions about personal epistemology could be best understood as beliefs about the ontology, fallibility, and decidability of knowledge claims (Gottlieb 2007, p. 28). Moreover, these beliefs varied in the following ways. Beliefs about ontology ranged from realist to perspectivist; beliefs about fallibility ranged from fallibilist to infallibilist; and beliefs about decidability from rationalist to nonrationalist (p. 15). In reflecting on these findings he suggested that 'trajectories of epistemic development vary not only across "domains" or "dimensions" but also across communities.... neither dimensions nor domains alone can account for how people's epistemological beliefs evolve over the course of adolescence' (p. 29).

He then critiqued extant epistemological research for insensitivity to sociocultural context. He argued that the evidence suggests that a person's epistemological belief is subject to a variety of contextual influences, many of which derive from the particular cultural settings (e.g., familial, religious, institutional) within which he or she is situated. 'Indeed', he went on, 'one way to interpret these findings is to think of epistemological

beliefs as things that reside not in individual heads but in the interactions between people, activities, and contexts' (Gottlieb 2007, p. 28). Such a view is a direct challenge to Kuhn et al.'s (2000) model of epistemological understanding that takes for granted that 'epistemic development follows a predictable trajectory that leads inexorably from objectivism, through subjectivism, to evaluativism. The logic of this progression may be impeccable, but the reality of epistemic development appears to be much less orderly' (Gottlieb 2007, p. 31). In other words, Gottlieb's research design, including the topics to be explored in the interview and his openness to new patterns in his data, has resulted in epistemological understandings not predicted by earlier research in personal epistemology.

Phan and colleagues are of interest because their work spans the holistic and individuated schools of personal epistemology. That is, they draw on the holistic school in their use of interviews to conduct qualitative research in which they argue, following Vygotsky, that personal epistemology and learning approaches are embedded culturally and historically (Phan, Maebuta & Dorovolomo 2010). They draw on the individuated school, however, for their analytic framework that focuses on an 'examination of individuals' personal epistemological beliefs' (p. 472); and they apply Hofer and Pintrich's (1997) construct of personal epistemology as being about the certainty and simplicity of knowledge and the source and justification of knowing. The participants in Phan's (Phan 2008, p. 803) study were Pacific Islands tertiary students in Psychology, Arts or Education.

2.2.1.5 Discussion

My account of the holistic school has been intended to demonstrate common features and differences in the work of key researchers. Common features include an emphasis on qualitative, interview-based research to reveal implicit assumptions about the nature of knowledge and knowing; and an emphasis on the way individuals make meaning of their world through complex, holistic positions, perspectives, phases, stances or understandings. The names of these epistemological categories and their number vary among researchers but they address common themes related to the source of knowledge, the knower's stance in relation to the justification of knowing, and issues of the certainty and structure of knowledge. Importantly, moreover, researchers in the holistic tradition of personal epistemology understand knowledge and knowing to include ethical, social and practical knowledge. Increasingly, researchers in the holistic

tradition are exploring the relationship between cultural context and personal epistemology.

Where quantitative instruments have been developed they are intended to explore the relationship between holistic epistemological positions and issues such as reasoning strategies or learning preferences. King and Kitchener (2004) and Kuhn (1991), for instance, focus their measures on the justification of knowledge through exploring how participants in their studies address ill-structured problems. Their findings, however, are expressed in terms of multi-faceted positions rather than single beliefs. Similarly, the Attitudes to Teaching and Learning Survey (ATTLS) focuses on an aspect of the justification of knowing, that is, the respondent's preference for connected or separate knowing (Galotti et al. 1999). Zhang's Cognitive Development Inventory (Zhang 2002) focuses on Perry's positions of dualism, relativism and committed relativism but emphasises the reasoning aspect of these positions. Moore's (1989) instrument, the Learning Environment Preferences (LEP) survey, attempts to capture Perry's holistic epistemological positions as they can be inferred from student preferences for their learning environment. Bond, Belenky and Weinstock (2000) and Bond and Burns (2006) use measures derived from the WWK epistemological perspectives to develop parenting programs appropriate to the holistic epistemology of participants.

Differences among researchers in the holistic school pertain to whether, or in what form, researchers conceptualise personal epistemology to be developmental; and whether, and to what extent, they explore modes of reasoning other than critical thinking. Further discussion of the modes of reasoning explored by holistic researchers will be considered in Section 2.3.4. Holistic researchers have also diverged with respect to the educational status of the participants in their studies. Some researchers have focused solely on students enrolled in formal education whilst others have conducted studies in both formal education settings and in alternative settings, such as post college environments (Baxter Magolda), civic engagement (Kuhn, Weinstock & Flaton 1994), vocational education and training contexts (Brownlee and colleagues), or, in the case of Belenky and her WWK collaborators, 'invisible colleges' (Belenky et al. 1986, p. 12). In other words, the role of participation, or non-participation, in formal education has been identified as a significant variable in personal epistemology research.

In Section 2.2.2, the individuated school of personal epistemology will likewise be considered from the perspective of methodology, underlying theoretical assumptions

and the relationship between culture and personal epistemology. Differences and similarities among researchers will also be identified.

2.2.2 Individuated school

This section focuses on the theoretical assumptions and measurement tools characteristic of the individuated school of personal epistemology. In this context the epistemological beliefs proposed by Schommer (1990) are described and compared to the conceptualisations of other researchers in the individuated school. Then there is a discussion of how links between epistemological beliefs and context, including culture, are conceptualised and how changing epistemological beliefs are conceptualised. Following on from this discussion, critiques of the individuated school are considered. The section concludes with a discussion of a theoretical framework suggested by Hofer and Pintrich (1997) through which both the holistic and individuated schools can be analysed. Their framework has implications for my own research.

2.2.2.1 Schommer, her exponents and legacy

Marlene Schommer (after 2000, Schommer-Aikins) pioneered the individuated approach to the study of epistemological beliefs. Reflecting on nearly a quarter century of her research Schommer (Schommer-Aikins 2004), identified her conceptual scheme as emerging from her consideration of the personal epistemology literature including Perry, King and Kitchener, and Ryan. Ryan's studies (Ryan 1982, 1984) were designed as an extension of the Perry Scheme and included a quantitative component. That is, Ryan (1984) set out to go beyond describing epistemological beliefs as dualist or relativist and to establish 'the general significance of naïve epistemological beliefs for academic performance' (p. 1227). He found that, 'naïve epistemological beliefs' are implicated in 'the process of prose composition' (p. 1236) and that there was a statistically significant relationship between 'the maturity of a student's coherence criterion and the coherence of his or her prose' (p. 1236). Schommer also drew on Schoenfeld's studies of children's beliefs about mathematics. He argued that 'If one wishes to affect students' behavior, one must be able to describe it accurately and to characterize what causes it -- and it would appear that belief systems are a major driving force in students' behavior' (Schoenfeld 1982, p. 31).

Schommer synthesised her reading by hypothesizing that the complex epistemological positions identified by Perry and King and Kitchener are comprised of separate epistemological beliefs that can be described in a way that facilitates their study using a

quantitative method such as a questionnaire. She said that personal epistemology may be conceptualised, 'as a system of beliefs. That is, personal epistemology is composed of more than one belief. ... Beliefs within the system are more or less independent, that is, it cannot be assumed that beliefs will be maturing in synchrony' (Schommer-Aikins 2002, p. 106). In this way she challenged the holistic approach to personal epistemology by focussing on individual beliefs rather than holistic patterns of implicit assumptions about knowledge and knowing that inform the way in which individuals understand the world.

In 1990 Schommer defined, 'from a naïve epistemological persuasion' (p. 499), the five beliefs comprising personal epistemology and provided their shorthand terminology in parentheses. Each belief was expressed as a dichotomy. She wrote:

(a) "Knowledge is simple rather than complex" (Simple knowledge), (b) "Knowledge is handed down by authority rather than derived from reason" (Omniscient Authority), (c) "Knowledge is certain rather than tentative" (Certain Knowledge), (d) "The ability to learn is innate rather than acquired" (Innate Ability), and (e) "Learning is quick or not at all" (Quick Learning). (Schommer 1990, p. 499)

This formulation of five knowledge beliefs as dichotomies became the basis of the Epistemological Beliefs Questionnaire (EBQ) that Schommer developed (1990) and that has been widely used in her own and others' research (Schommer-Aikins 2002, p. 107).

Subsequently, Schommer (1994) refined her conception of epistemological beliefs by describing each belief in terms of a continuum rather than a dichotomy. She expressed the five beliefs in terms of the following continua:

1. Source of knowledge: From knowledge is handed down by omniscient authority to knowledge is reasoned out through objective and subjective means.
2. Certainty of knowledge: From knowledge is absolute to knowledge is constantly evolving.
3. Organization of knowledge: From knowledge is compartmentalized to knowledge is highly integrated and interwoven.
4. Control of learning: From ability to learn is genetically predetermined to ability to learn is acquired through experience.
5. Speed of learning: From learning is quick or not-at-all to learning is a gradual process. (Schommer 1994, p. 301)

The formulation of knowledge beliefs as continua was influential in Hofer and Pintrich's (1997) conceptualisation of personal epistemology.

On another occasion, Schommer suggested that 'Epistemological beliefs are better characterized as frequency distributions rather than dichotomies or continuums. For example, it is likely that a mature learner believes that a small percentage of knowledge is unchanging and a substantial percentage of knowledge is evolving' (Schommer-Aikins 2002, p. 106). The formulation of knowledge beliefs as frequencies, however, did not subsequently prove to be as influential as her suggestion that the beliefs could be conceptualised as dichotomies or continua.

My discussion of Schommer will now develop two themes. The first is her influence on theory through her conceptualisation of knowledge beliefs as continua and the second theme is her contribution to empirical research through her development of a quantitative measure that conceptualised knowledge beliefs as dichotomies. As regards theory, Schommer's suggestion that there are five knowledge beliefs that can be described in terms of continua was influential in the development of Hofer and Pintrich's (1997, p. 119) conceptualisation of personal epistemology as dimensions. That is, Hofer and Pintrich argued in their review of the personal epistemology literature that empirical findings from the field could be analysed as illustrating four dimensions of personal epistemology across two components of the construct of personal epistemology – nature of knowledge and nature of knowing.

The two dimensions of the nature of knowledge are certainty of knowledge and simplicity of knowledge (similar to Schommer's certainty and organisation of knowledge). The two dimensions of knowing are the source of knowledge and the justification for knowing (the concept of the source of knowledge is shared with Schommer). Moreover, each of the four dimensions of personal epistemology can be expressed as continua. Hofer and Pintrich then illustrate how their conceptualisation of personal epistemology encompasses the views of Schommer and those of 'developmentalists' (Hofer & Pintrich 1997).

Nature of knowledge:

- Certainty of knowledge conceptualised by Schommer as varying from absolute to evolving (Hofer & Pintrich 1997, p. 115); and in developmental schemes as moving from absolute, to relativist, to constructivist (p. 120);
- Simplicity of knowledge conceptualised by Schommer as varying from knowledge as isolated unambiguous bits to knowledge as interrelated concepts (Hofer & Pintrich 1997, p. 115); and in developmental schemes as moving from

discrete, concrete, knowable facts to knowledge as relative, contingent, and contextual (p. 120).

Nature of knowing:

- Source of knowledge conceptualised by Schommer as beliefs about authority (Hofer & Pintrich 1997, p. 120) but amongst developmentalists conceptions vary from knowledge originates outside the self and resides in external authority to an evolving conception of self as knower, with the ability to construct knowledge in interaction with others (p. 120);
- Justification of knowing includes how individuals evaluate knowledge claims. Beliefs vary along a 'continuum of dualistic beliefs to the multiplistic acceptance of opinions to reasoned justification for beliefs' (p. 120). In Schommer the justification of knowing is not a separate belief to beliefs about the source of knowledge.

When Hofer and Pintrich's (1997) conceptualisation of personal epistemology is considered alongside Schommer's (1994) conceptualisation of five knowledge beliefs as continua three comparisons can be made. Firstly, Schommer's certainty of knowledge (certain to evolving) and organisation of knowledge (compartmentalised to highly integrated) is consistent with Hofer and Pintrich's (1997) certainty and simplicity of knowledge.

When it comes to the nature of knowing, however, there are significant differences between Schommer (1994) and Hofer and Pintrich (1997). Hofer and Pintrich, for instance, emphasise the source of knowledge in terms of a continuum from an external to an internal source of knowledge with an explicitly agentic conception of the self as knower. That is, they conceptualise knowledge as a continuum from originating 'outside the self' to the 'self as knower.' Schommer's continuum from omniscient authority to reason and evidence, however, is less explicit about the continuum from an external source of knowledge to an internal, agentic source of knowledge. After all, omniscient authority with its implication of cosmic insight could be on a continuum with expert authority seen as a more limited, but still external, source of authority associated with reason and evidence. In this reading of Schommer's continuum, the knower is less agentic and more dependent on either omniscient or reasoned authority but is not actively engaged in constructing knowledge in interaction with others.

Even more significantly, Hofer and Pintrich (1997) identify the justification of knowing as a separate dimension to the source of knowledge. There is no comparable belief or dimension in Schommer (1994). That is, by theorising omniscient authority and reasoning as opposite ends of a spectrum Schommer (1994) conflates two distinct dimensions of personal epistemology - the source of knowledge and the process that one uses to justify belief. In Hofer and Pintrich (1997), however, the process that one uses to justify belief is separate from the external or internal source of knowledge that one may draw upon. This opens the possibility of a knower being at the 'self as knower' end of the source dimension of knowledge whilst his or her implicit assumptions about the justification of knowing cannot be predicted.

That is, the self as knower could draw on an internal sense of experiential knowledge and evaluate new knowledge in terms that could vary from a dualistic conception of knowledge as either right or wrong, to a multiplistic belief that there is no criterion for distinguishing between knowledge arising from different experiences to a reasoned basis for distinguishing between knowledge that arises from different experiences. Knowers drawing on external knowledge could apply a similar range of strategies to distinguish between knowledge from different external sources. In other words, by conceptualising the source and justification of knowing dimensions separately, Hofer and Pintrich (1997) provide a much more open ended conceptual framework for research than Schommer's continuum of source of knowledge from omniscient authority to reason and evidence (Schommer-Aikins, Bird & Bakken 2010; Schommer 1994).

A final difference between Schommer's (1994) five knowledge beliefs and Hofer and Pintrich's (1997) four dimensions of personal epistemology is that Hofer and Pintrich do not include learning beliefs in their conceptualisation of personal epistemology. Theoretically, the inclusion of learning beliefs (speed of knowledge acquisition and innate ability) among epistemological beliefs has been seen as controversial and although many cognitive researchers continue to include learning beliefs in their measure of personal epistemology, Hofer and Pintrich argued against their inclusion among epistemological beliefs. By 2004, Schommer was also separating out beliefs about knowledge and beliefs about learning for purposes of her embedded systemic model (Schommer-Aikins 2004, p. 24).

Turning now to Schommer's contribution to empirical research, I will focus on her development of a quantitative measure of personal epistemology. In accordance with

her conception of personal epistemology as a system of five dichotomous beliefs, Schommer (1990) set herself the task of designing an assessment tool in the form of a self-report measure (paper and pencil measure) that could be administered more easily and inexpensively than an interview. The aim of her Epistemological Beliefs Questionnaire (EBQ) was to establish whether the beliefs that she hypothesised in theory could be supported empirically. It comprised 63 items with two or more subsets of items designed to capture her proposed five epistemological beliefs – simple knowledge, omniscient authority, certain knowledge, quick learning and innate ability. Items are domain general. Schommer's research confirmed the existence of four of the five hypothesised epistemological beliefs but not omniscient authority (Schommer-Aikins 2004, p. 22).

In the following years, across many studies conducted by multiple researchers findings about the existence of five knowledge beliefs varied, but simple knowledge and quick learning appeared most regularly (DeBacker et al. 2008). Empirically, however, the EBQ and related measures have been criticised on the basis of the instability of the factor structures underlying the self-report measures and the low internal consistency coefficients typically reported for the subscales (DeBacker et al. 2008).

Revisions of the EBQ

Since its inception, numerous researchers have revised the EBQ (Bendixen, Schraw & Dunkle 1998; Chan & Elliott 2002; Jehng, Johnson & Anderson 1993; Wood & Kardash 2002) but in doing so they have shared some common practices and assumptions, including basing their instruments on Likert scale items, assuming epistemological beliefs are domain general, conceptualising epistemological development as consisting of changes in a set of five beliefs about the nature of knowledge and learning, not emphasising the relationship between epistemological beliefs, and not necessarily describing each of these beliefs in identical ways (DeBacker et al. 2008).

Interestingly, while not describing beliefs in identical ways, most researchers in the individuated school retain Schommer's (1990) composite measure (omniscient authority) as a measure of the source of knowledge and justification of knowing and two measures of learning beliefs. Some of the major modifications of the EBQ are summarised below:

Jehng, Johnson and Anderson (1993) retained Schommer's conceptual structure except for replacing a belief in the simplicity of knowledge with a belief in orderly

processing. That is 'the learning process tends to be regular rather than irregular' (Jehng, Johnson & Anderson 1993, p. 26). This conceptualisation emphasises the process of learning - orderly, quick and innate (p. 28) - rather than the process of knowing. The authors intended their instrument to explore the relationship between epistemic beliefs and levels of education and field of study. Their findings suggested that epistemic beliefs may evolve with exposure to education (p. 32).

Wood and Kardash (2002) constructed the Epistemological Beliefs Survey (EBS) in response to the authors' inability to satisfactorily reproduce the expected factor structure of Schommer's (1990) EBQ or Jehng et al.'s (1993) measure (Wood & Kardash 2002, p. 242). The factors they identified in their study (pp. 246-9) can be roughly aligned with the beliefs described in Schommer's study as follows:

Wood and Kardash (2002)	Schommer (1990)
Factor 1: Speed of knowledge acquisition	Quick learning
Factor 2: Structure of knowledge	Simple knowledge
Factor 3: Knowledge construction and modification	Omniscient authority
Factor 4: Characteristics of successful students	Innate ability
Factor 5: Attainability of objective truth	Certain knowledge

When I reviewed the items comprising Wood and Kardash's (2002) factor 'knowledge construction and modification', it was apparent that many of the items are the same as those defining Schommer's omniscient authority. For example, Wood and Kardash use items such as 'even advice from experts should be questioned' and 'forming your own ideas is more important than learning what the textbooks say' (p. 248). What is different is that Wood and Kardash interpret these items from the assumption that knowledge is derived from reason rather than handed down by authority. Their factor thereby reverses Schommer's (1990) omniscient authority factor that she defined as 'Knowledge is handed down by authority rather than derived from reason' (p. 499). Despite this reversal of interpretation, Wood and Kardash share with Schommer the practice of not separating out beliefs about the source of knowledge from beliefs about the justification of knowing.

Bendixen, Schraw and Dunkle (1998) constructed the Epistemic Beliefs Inventory (EBI) as a modified / shortened version of Schommer's questionnaire in order to explore the relationship between epistemic beliefs and moral reasoning. Their modification included writing new items for omniscient authority. As a result, they reported that three statements loading on the omniscient authority factor were items unique to their instrument. They concluded that 'This fact suggests that previous studies by Schommer (1990, 1993) failed to identify the omniscient authority factor due to lack of relevant items rather than the non existence of the construct itself' (p. 197). Like Schommer, they did not write statements that would lead to the emergence of a justification of knowing factor separate from an omniscient authority factor.

Chan and Elliott (2002) also developed a new questionnaire based on Schommer (1990) but adapted to research with teacher education students in Hong Kong. This survey identified an Authority/Expert knowledge factor rather than an Omniscient Authority factor because they identified a poor fit between Schommer's factor and the data they gathered in Hong Kong. Their questionnaire will be discussed further in Section 2.2.2.3 along with other survey studies that have used a similar instrument to Chan and Elliott (2002).

Colbeck (2007) re-crafted Schommer's Epistemological Beliefs Questionnaire in order to make the language more easily comprehended by the participants at the University of Tasmania, Australia. The conceptual structure, however, remained unchanged from that proposed by Schommer (1990).

A notable feature of the quantitative measures of epistemological beliefs reviewed here is that none of them unambiguously separates out a belief pertaining to the justification of knowing identified by Hofer and Pintrich (1997). An exception to this practice is the survey instrument developed by Karabenick and Moosa (2005) in their study of Omani and US college students which examined whether cultural differences in authority relations would be reflected in epistemic beliefs (p. 376). Their instrument was designed to explore epistemological beliefs in terms of Hofer and Pintrich's (1997) four dimensions of personal epistemology and consequently separated out the source of knowledge and the justification of knowing. Their measure of the justification of knowing varies from dualistic to multiplistic to evaluative.

2.2.2.2 Findings regarding epistemological beliefs

Schommer's conceptualisation of five independent epistemological beliefs that can be investigated separately has been highly influential and self-report measures are now widely used as a basis for extensive research. The conceptualisation of separate beliefs has facilitated the investigation of the influence of epistemological beliefs on various factors in effective learning. Findings have been reported that epistemological beliefs are related to reading comprehension (Schommer 1990, p. 498), achievement, motivation, conceptual change and learning strategies (Hofer 2004, pp. 131-2), and also to self-regulated learning and conceptual change learning (Chai et al. 2010, p. 112).

There has also been considerable discussion of whether epistemological beliefs are domain-general or domain-specific. Some theorists, including Hofer (2000), suggested that epistemological beliefs may be domain or discipline specific. Buehl and Alexander (2006) proposed a nested model – domain specific beliefs, for example, in a discipline, nested in more general beliefs about academic knowledge which are embedded within general epistemic beliefs at a broad level. Muis, Bendixen and Haerle (2006) review multiple studies to demonstrate support for the hypothesis that epistemological beliefs can be domain-specific. Hofer (2006) asserts in her commentary on Muis et al. (2006) that they have established the existence of domain-specific beliefs but she warns against jettisoning the idea of domain-general beliefs arguing instead for the existence of both domain-general and domain-specific beliefs (Hofer 2006, p. 72).

2.2.2.3 Challenges for the individuated tradition

Two challenges that have confronted researchers in the individuated tradition have been how to explore the relationship between cultural context and epistemological beliefs and how to conceptualise changes in epistemological beliefs.

Epistemological beliefs and cultural context

In their review of the literature on epistemological beliefs and culture, Chan and Elliott (2002, p. 394) reported that studies using Schommer's 1990 EBQ in Chile (Arredondo & Rucinski, 1996), Korea (Lee, 1995), Japan (Mori, 1997) and among Hispanic Americans (Pai, 1990) show some differences in epistemological beliefs from Schommer's (1990) study of North American college and university students. They concluded that this may be due to cultural bias in the questionnaire and argued that it

'is not unreasonable to also doubt the applicability of the questionnaire in a Chinese cultural context such as Hong Kong' (Chan & Elliott 2002, p. 395).

In light of their reservations about the EBQ Chan and Elliott's (2002) approach to their research with 385 Hong Kong teacher education students was to attempt to validate Schommer's epistemological questionnaire, then to develop a modified questionnaire and finally to interview a sample of survey respondents to better understand the findings of the survey (p. 398). Their modification of the questionnaire, however, was not intended to separate out the source of knowledge from the justification of knowing but rather to formulate the source of knowledge factor to reflect the cultural context of Hong Kong as revealed through their empirical research.

Chan and Elliott's (2002) findings showed that whilst Hong Kong students displayed a strong respect for expert authority, many also emphasised the importance of one's own reasoning and judgment (pp. 403-4). In this respect the qualities associated with beliefs about the source of knowledge differed from Schommer's hypothesis that the source of knowledge was a continuum where respect for omniscient authority is juxtaposed to an emphasis on personal reasoning. Amongst Hong Kong students, however, authority is seen as defined by expertise rather than omniscience and hence it can be critiqued on the basis of reasoning. Chan and Elliott (2002, p. 408) named this factor Authority/expert knowledge.

As well as their findings about the source of knowledge, Chan and Elliott (2002) also addressed broader methodological issues and urged researchers to use more than one measure of epistemological beliefs in order to triangulate findings. They also proposed that conducting interviews in cross cultural research is important (p. 405) to ensure that quantitative measures that are developed do not inappropriately ascribe *a priori* views to respondents.

Chai, Khine and Teo (2006) adopted a version of the EBQ similar to that used by Chan and Elliott (2002) to survey the epistemological beliefs of 537 Singapore pre-service teachers (Chai, Khine & Teo 2006, pp. 290-1). They found that the pre-service teachers tended to emphasise the importance of effort in learning coupled with processes such as creativity and critical thinking. But they also tended to have confidence in the ability of experts to come to authoritative conclusions (p. 295). In other words, once again the empirical findings diverged from Schommer's continuum that the source of knowledge ranges from omniscient authority to reason and evidence.

Rather, in Hong Kong and Singapore, students tended to express beliefs that integrated a respect for expert authority with a valuing of independent reasoning.

Lee, Zhang, Song and Huang's (2013) study of junior secondary school teachers in China was also based on Chan and Elliott's (2002) adaptation of Schommer's EBQ. Lee et al. (2013) found that the factor 'authority/expert knowledge' was not revealed but instead the factor 'criticising authority' emerged in their study (p. 127). They argue that this reflects a view that 'knowledge transferred by authority and expert should be questioned' and that this aligns with earlier research that 'criticizing authority has a long history in Chinese culture' (p. 137). In other words, like Chan and Elliott (2002), they found that the Schommer's model of personal epistemology based on US students was not directly applicable to Chinese students.

Youn (2000), using Jehng et al.'s (1993) version of the EBQ in the USA and Korea, also found that the model of personal epistemology found amongst US students was not directly applicable to Korean students. That is, the factor structure of the Korean sample showed significant variation in that '*omniscient authority* could have been factorized with the *personal* learning dimensions, *innate ability* and *quick process*' (Youn 2000, p. 101). In other words, the personal epistemologies of Korean students did not focus on the source of knowledge but rather focused on learning as having three personal dimensions - the relationship with the teacher, speed of learning and innate ability. Youn related this finding to the relationship between epistemological and cultural beliefs, arguing that the teacher-centred learning approaches of collectivistic societies emphasise following instructions from teachers and accuracy in problem solving (p. 102). This again reinforces the importance of being aware of the possibility of cultural bias in questionnaire construction.

Introducing papers presented at a 2009 conference in Taiwan, Hofer (2010b) said about two recent studies that 'What is most interesting in these two particular studies is that the beliefs about knowledge did not function as predicted' (p. 180). This led her to urge that researchers consider 'what additional beliefs about knowledge and knowing might exist, beyond those currently being measured' (p. 180). Drawing her reflections together on issues to be explored in cross-cultural epistemological research, Hofer (2010a, p. 143) suggested that some common issues to address include:

- Construct definition and whether it is representative across cultures;
- Questioning of developmental models that assume a movement from uncritical acceptance of authority to a critical stance;

- Research on socially distributed aspects of knowledge and cultural variation in understandings about where knowledge resides.

The common thread, then, in the empirical findings of the individuated school discussed previously, and Hofer's (2010a) observations, is that *a priori* assumptions in personal epistemology research across cultures need to be treated with caution. Consistent with this view, Alexander and her colleagues (Alexander & Dochy 1995; Maggioni, Riconscente & Alexander 2006) have explored the links between culture and epistemology via a study of popular perceptions about beliefs and knowledge. Using written tasks, interviews and visual representations of the relationship between beliefs and knowledge, Alexander and colleagues showed that there were differences in perceptions of this relationship amongst US respondents and between US respondents and respondents in Europe – mainly Dutch and Italian respondents. They concluded by noting the importance of using multiple instruments to explore epistemological beliefs and instruments that do not contain tightly defined *a priori* assumptions.

Epistemological beliefs – their interrelationships and development

As already outlined, Schommer's (1990) conceptualisation of five epistemological beliefs formed the basis of her own research and that of many others. But questions regarding the development of epistemological beliefs, their interrelationships and their relationship with other psychological constructs such as learning as well as with their context have been recurring themes in the literature. Whilst Schommer emphasised the independence of each epistemological belief, it has also been argued that 'an individual's beliefs about knowledge and knowing are organized into epistemological theories, as structures of interrelated propositions that are interconnected and coherent' (Burr & Hofer 2002, p. 204). Research has also explored the developmental characteristics of epistemological beliefs. Each of these beliefs has its own developmental trajectory and developmental change may vary across the range of individual epistemic beliefs (Bendixen, Schraw & Dunkle 1998; Schommer-Aikins 2002). Accordingly, there have been calls to explore both the interrelationship of epistemological beliefs and their development.

Bendixen and Rule (2004), for instance, argued that an integrated model of personal epistemology is needed to clearly articulate the relationship between personal epistemology and how epistemological beliefs change and develop. They therefore proposed a model that they claimed was 'not stage-like in the traditional developmental sense but views the development of personal epistemology as a dynamic process

driven by many factors, including context, affect, and environment' (p. 73). The model they proposed has at its core a mechanism of change comprising three interrelated components – epistemic doubt, epistemic volition and resolution strategies that are consistent with Piaget's concept of equilibration (p. 71). The model also includes four dimensions of personal epistemology: the certainty, simplicity and source of knowledge and the justification of knowing (p. 73), and environmental factors including the classroom (p. 75). In 2010 they extended this model to address the question of how the model could inform teaching and learning at the level of the individual in a classroom situation (Rule & Bendixen 2010). Their model is consistent with Schommer's call for the development of 'dynamic-fluid models of epistemological belief systems' (2004, p. 27).

Consistent with her call for embedding the study of epistemological beliefs in the study of other systems, Schommer proposed an embedded systemic model 'to test the flow of influence among components of the model' (2004, p. 26). In her discussion of this model Schommer illustrated the convergence of thinking across the field of personal epistemology that has emerged in the preceding years. She said, 'Although an epistemological belief system allows researchers and teachers to look at the parts, it does not exclude looking at the whole' (p. 23). She also describes a likely relation between views on authority and views on learning which is suggestive of a broader orientation to knowledge than that captured by measurement of one epistemological belief (p. 26). Her inclusion of cultural values as a factor influencing personal epistemology in her embedded systemic model (p. 26) is further evidence of the evolution of the 'cognitive' or 'individuated' school of personal epistemology towards a more contextual approach to the study of personal epistemology. In 2010 Schommer and colleagues incorporated the concept of the recursive development of epistemological beliefs into the model (Schommer-Aikins, Bird & Bakken 2010).

2.2.2.4 Discussion

Researchers in the individuated tradition focus on beliefs about learning and about the certainty, structure and source of knowledge. These researchers also emphasise the use of quantitative measures such as the EBQ in which the source of knowledge and justification of knowing are often conflated. The quantitative instruments comprise a series of statements formulated to be as conceptually distinct from each other as possible in order to reduce the likelihood of respondents affirming mutually exclusive statements. In other words, Schommer and her colleagues are confronted by the task

of framing a questionnaire that is valid, that is, captures a broad concept, is reliable, and is sufficiently narrowly defined to avoid ambiguity (2004, p. 22). A questionnaire designed in this manner is strongly normative meaning that it does not allow for respondents to formulate entirely new options to characterise their beliefs. Rather, their only option is to place their beliefs along a continuum. Consequently, it is better suited to confirmatory rather than exploratory research. One way to address this limitation is to combine an epistemological beliefs survey with interviews or other qualitative instrument either to inform the development of the quantitative measure or to assist in interpreting its findings.

The discussion of the individuated school would be incomplete, however, if it only focused on the limitations of the quantitative measures used by these researchers. Instead, it is important to acknowledge that Schommer's (1990) conception of epistemological beliefs was an important impetus for Hofer and Pintrich's (1997) conceptual framework that has had an on-going role in facilitating research and theorising in the field of personal epistemology. The contribution of Hofer and Pintrich's conceptual framework to the current study is discussed in Section 2.3 where it is proposed that it be revised to provide a more flexible and less prescriptive framework for personal epistemology research.

2.2.3 Contextualist School

Both the developmental and cognitive approaches to the study of personal epistemology have been challenged by researchers who argue that the focus of study in epistemology research may more properly be the contexts that serve to engage epistemological resources rather than individuals and their epistemological beliefs, positions or perspectives (Hammer & Elby 2003; Louca et al. 2004; Rosenberg, Hammer & Phelan 2006). In the light of this focus on the contextual activation of epistemological resources Pintrich (2002, p. 397) used the term 'contextualist' to describe this approach to the study of personal epistemology. Other commentators such as Urman & Roth (2010, p. 30) have used the term 'practitioner researchers', drawing attention to the fact that the research has been undertaken in classrooms and is intended to contribute to more effective epistemological interventions to support student learning.

2.2.3.1 Emergence of the field

As a result of their exploratory classroom research, contextualists have identified manifold epistemological resources that suggest the multi-faceted and complex nature of epistemologies. In other words, contextualist research yields in-depth descriptions of epistemological resources that are deployed in specific contexts in response to contextual cues. In the richness of their findings, contextualists have something in common with the interview based research by Perry (1970), Belenky et al (1986) and Baxter Magolda (1992). The categories that contextualists use to order their data and the wide array of resources for knowledge and knowing that they have identified have been described by Hammer and Elby (2003, p. 56), Louca, Elby, Hammer & Kagey (2004, pp. 58-9), Urman and Roth (2010, p. 28), and Rosenberg, Hammer & Phelan (2006, p. 266).

To paraphrase Hammer and Elby (2002, pp. 177-81) the organising categories and epistemological resources that they propose are:

- Resources for understanding the nature and sources of knowledge. These resources were revealed by asking children 'How do you know ----? Their responses suggested that they saw knowledge as arising from: propagated 'stuff' – information transmitted from one person to another; free creation – ideas that arose spontaneously; fabricated 'stuff' – knowledge formed from other knowledge; knowledge as direct perception;
- Resources for understanding epistemological activities. These resources were revealed by asking children 'What are you doing ---? These diverse activities included examples such as accumulation of information; formation of their own ideas; and checking conclusions;
- Resources for understanding epistemological forms. Epistemological forms that activate different sets of resources include stories, rules, songs, lists, pictures, categories, statements, words, names, and numbers;
- Resources for understanding epistemological stances. Examples include belief, doubt, disbelief, understanding, puzzlement, and acceptance.

Hammer and Elby, however, are emphatic that the framework of epistemological resources that they describe is 'at a finer grain size than unitary beliefs' (2002, p. 171) thereby distinguishing their framework from both holistic and individuated approaches to personal epistemology. Subsequently, Hammer and his colleagues have embarked on the task of identifying a range of epistemological resources that can be found in research situations. The research situations that they choose are ones which involve

what they refer to as practical epistemologies rather than formal epistemologies (Rosenberg, Hammer & Phelan 2006, p. 266). That is, they analyse discussions in classroom settings and infer epistemologies from what is said. Such a research approach is consistent with their interest in enhancing learning in science classrooms. They argue that the resources model of epistemologies has strong utility as a way to guide effective classroom interventions (2006, p. 289).

2.2.3.2 Evolution of the Contextualist approach

Whilst the first phase of contextualist research emphasised the diversity of epistemological resources, research by Rosenberg, Hammer and Phelan (2006) has emphasised how manifold resources are mobilised into epistemological modes or patterns. They posit that rather than individuals perceiving the world through stable epistemological positions, they achieve epistemological coherence in specific situations via the epistemological mode that they apply in the situation. For instance, in their classroom research Rosenberg et al. identified two epistemological modes: cut and paste and story-telling (pp. 283-5). The first mode is initiated by beginning a task with propagated 'stuff' – information that students have been told. The story-telling mode is initiated by fabricated 'stuff' – mental images that students have constructed for themselves based on previous information. As I demonstrate in Table 2.1, they describe these modes in terms that can be mapped onto Hofer and Pintrich's (1997) framework. In this way, contextualists allow for flexibility and diversity but also demonstrate the possibility of coherence in epistemological modes. This can be interpreted as addressing a critique of their early work by Baxter Magolda (2004) who asserted that 'epistemological transformation is a shift to a more complex set of epistemological assumptions rather than the acquisition of particular learning strategies or skills' (p. 31). The two epistemological modes are illustrated below.

Table 2-1 Comparison of contextualist epistemological modes

Mode	Nature / Source:	Resources engaged by situation			Product
		Form:	Stance:	Understanding:	
Cut and paste	Propagated 'stuff'	Information	Acceptance	Ordering Accumulation	Ordered list
Story telling	Fabricated 'stuff'	Mental image	Puzzlement	Imagining Consideration of cause and effect	Causal chain

2.2.3.3 Discussion

From my perspective the contextualist approach to epistemology is interesting because, notwithstanding its originality and the richness of epistemological resources that it identifies, it is not inconsistent with the broad themes that have preoccupied earlier researchers in the field of personal epistemology. That is, the categorisation of epistemological resources that Rosenberg, Hammer and Phelan (2006) use to order the manifold epistemological resources that they identify are consistent with Hofer and Pintrich's (1997, pp. 119-20) four dimensions of knowledge and knowing: source; certainty; simplicity of knowledge; and justification of knowing.

The alignment of Hofer and Pintrich's (1997) conceptualisation of personal epistemology and that of contextualists is demonstrated in the table below. One notable difference between Hofer and Pintrich's characterisation of dimensions and that of contextualists, however, is that Hofer and Pintrich conceived of the dimensions as continua, thereby limiting the diversity of assumptions and behaviours that could be characterised on each dimension to those consistent with the continuum ascribed to that dimension. By focusing on the observed richness of epistemological resources in their data, contextualists disavow the notion of continua and use the terminology 'resources for understanding' that enables a more comprehensive detailing of resources than to limit their data to the framework of a continuum.

Table 2-2 Comparison of terminology: epistemological dimensions and epistemological resources

	Dimensions Hofer & Pintrich (1997)	Resources (Rosenberg, Hammer & Phelan, 2006)	Contextualist examples (Rosenberg, Hammer & Phelan, 2006)
Nature of knowing	Source	Resources for understanding nature and sources of knowledge	Propagated 'stuff' Free creation Fabricated 'stuff' Direct perception
	Justification	Resources for understanding epistemological activities	Accumulation Ordering Imagining Cause and effect
Nature of knowledge	Structure	Resources for understanding epistemological forms	Information Mental image Causal chain
	Certainty	Resources for understanding epistemological stances	Acceptance Puzzlement Doubt

Chinn, Buckland and Samarapungavan (2011) go beyond mapping contextualist work onto Hofer and Pintrich's framework (1997) and draw on contextualist research 'to extend this landmark framework of Hofer and Pintrich (1997).' Their conceptualization of epistemic cognition, however, 'differs from the framework of Hofer and Pintrich in two important ways' (p. 142). It includes several new components of epistemic cognition and adds some additional 'fine-grained' cognitions to the dimensions of Hofer and Pintrich. The five components of Chinn et al.'s conceptual framework are epistemic aims and values; an extended account of the structure of knowledge; the sources and justification of knowledge and epistemic stances such as certainty; epistemic virtues and vices; and reliable and unreliable process for achieving epistemic aims.

From the point of view of developing a conceptual framework for the current study, Chinn et al.'s (2011) extended account of the structure of knowledge is helpful in drawing attention to the multiplicity of assumptions associated with this category. Conversely, their inclusion of the sources and justification of knowledge and epistemic stances in one category potentially masks important distinctions between epistemological assumptions. I have already articulated this concern with respect to instruments such as the EBQ that do not distinguish between the source of knowledge and the justification of knowing. As to their additional categories, these could be helpful in identifying important aspects of personal epistemology in extended texts such as the interviews. With respect to shorter texts such as the writing tasks, however, it is unlikely that they would yield enough information to justify their use.

2.2.4 Conclusion

Section 2.2 has sought to justify the use of the terminology holistic, individuated and contextualist to designate major schools of research in personal epistemology. It has also drawn on the work of major researchers in each of the traditions to illustrate theoretical and methodological features of each tradition, their differences and ways in which research in the different traditions has converged.

2.3 Holistic personal epistemology through signposts

In Section 2.3, the Literature Review considers the works of some key researchers in the holistic school in more detail. The focus on the holistic school reflects the argument in Section 2.1 that the holistic school is consistent with the personal epistemology that I bring to this study in that the ground breaking studies of Perry (1970), Belenky et al. (1986), and Baxter Magolda (1992) were closely observed and

richly descriptive accounts of the personal epistemology of individuals who sought to make sense of the world in the context of their particular settings. Subsequent holistic researchers have retained this focus on the meaning making of individuals in specific settings.

Moreover, the holistic school is consistent with the sociocultural view that I bring to this study that posits that the self, culture and context reciprocally impact on one another and are co-constitutive of the self. Perry (1970, p. 136), for instance, acknowledges the interpretative and agentic nature of the self when he says that 'Commitment requires a coming-to-terms with one's past ... it requires a decision as to the degree to which one will continue with the values of one's past and the degree to which one will break with them'. In a similar vein, Belenky et al. say that constructed knowers seek to emulate the ideal speech situation of Habermas that 'simultaneously taps and touches our inner and outer worlds within a community of others with whom we share deeply felt ... inter-subjective reality' (Habermas, 1982, p.620 cited in Belenky et al. 1986, pp. 145-6). Subsequent holistic researchers have also described the agentic nature of the self as it interacts with context and culture.

Within the field of holistic personal epistemology, the rationale for an in-depth discussion in this section of pioneering researchers Perry (1970) and Belenky et al. (1986) is that they directly inform my own work. The work of Baxter Magolda, however, is not considered so fully because her focus on the relationship between personal epistemology and identity is outside the scope of my study. In addition to the works of Perry and Belenky et al., the work of Kuhn and colleagues (2000; 1994) will also be considered in Section 2.3.3 because of its emphasis on the justification of knowing – a key concern of researchers in the holistic school and a significant feature of the primary sources that form the basis of my study.

2.3.1 Framework for analysing extant epistemological categories

In order to further consider the work of selected theorists in the holistic school, a conceptual framework is needed that is consistent with the assumptions of the holistic approach to the study of personal epistemology but also allows for critical reflection. The framework that is used here reflects the basic assumptions of the holistic school and draws on the individuated school for tools to inform the analytic framework but modifies my borrowings from the individuated school so that the final framework is more flexible and sensitive to the agency of the knower.

As discussed in 2.2.1, the field of holistic personal epistemology was pioneered by qualitative researchers who posited that epistemological positions, perspectives or phases are characterised by a cluster of implicit assumptions that relate to the different ways in which knowledge and knowing are conceptualised by individuals. These clusters of implicit assumptions are inferred by researchers from oral or written texts and are interpreted by researchers as forming ideal types or patterns that inform the way that study participants view and understand knowledge and the world. That is, holistic researchers foreground the role of the individual in drawing epistemological assumptions together as positions or perspectives from which to interpret knowledge. Consequently the analysis of the work of Perry and Belenky et al. will be based on consideration of each of the epistemological positions (Perry) and perspectives (Belenky et al.) that they describe.

As discussed in 2.2.2, an influential conception of personal epistemology that draws on concepts from the individuated school is Hofer and Pintrich's (1997) suggestion that empirical findings across the field of personal epistemology can be described as illustrating four dimensions of personal epistemology across two components of the construct of personal epistemology – nature of knowledge and nature of knowing. The two dimensions of the nature of knowledge are certainty of knowledge and simplicity of knowledge. The two dimensions of knowing are the source of knowledge and the justification for knowing (p. 119).

The concept of dimensions of personal epistemology is potentially pivotal to a more analytic approach to understanding the epistemological positions or perspectives described by researchers in the holistic tradition because it provides a way of considering the whole and the parts. That is, Hofer and Pintrich's suggestion is consistent with Wertsch's (1998) argument that tools of analysis can inform our understanding of a holistic phenomenon but cannot be regarded as separate from the whole (see Section 2.1). Hofer and Pintrich (1997) achieve the integration of the whole and the parts by suggesting that beliefs about knowledge are organised as theories and propositions that are interrelated: thereby going beyond Schommer's (1990) suggestion of separate epistemological beliefs. In other words, Hofer and Pintrich specify a relationship between epistemological beliefs or dimensions that allows for consideration of the parts (dimensions or beliefs) as well as the whole.

Nevertheless, for my purposes Hofer and Pintrich's (1997) framework needs to be adapted in order to make the agency of the knower more visible and the dimensions of

knowledge and knowing more flexible and less prescriptive than Hofer and Pintrich's framework implies. To this end, I propose the concept of 'signposts' to personal epistemology. Signposts to personal epistemology direct the reader or listener's attention to implicit assumptions about knowledge and knowing that can be inferred from written or oral texts. These assumptions are signposted by the terms 'source', 'certainty' and 'structure of knowledge' and 'justification of knowing'. Unlike dimensions of knowledge and knowing, however, the concept of signposts does not presuppose that the assumptions that are identified in a text will be similar to those found in previous research. That is, the signposts are stripped of the continua of assumptions that Hofer and Pintrich used to illustrate the concept of dimensions of personal epistemology (see Section 2.2.2.1).

Thus, signposts are proposed in the following form:

- The 'certainty signpost' draws attention to implicit assumptions about how certain the knower can be about knowledge and the type of certainty that is being sought.
- The 'structure signpost' draws attention to implicit assumptions about the way that components of knowledge relate to each other and assumptions about whether knowledge is understood as concrete or abstract.
- The 'source signpost' draws attention to implicit assumptions about where knowledge comes from and the relationship of the knower to the source of knowledge.
- The 'justification signpost' draws attention to implicit assumptions about the process by which the knower can know.

Associated with each signpost there are multiple implicit assumptions but they may not form continua or be common across epistemological positions or perspectives. Hence the source of knowledge signpost may be characterised in broad terms as implicit assumptions about where knowledge comes from but in any given situation the implicit assumptions may differ from those identified in earlier research. For instance, in one situation implicit assumptions about knowing may vary from reliance on external authority to reliance on reason but in another situation the assumptions may range from reliance on external authority to reliance on personal experience or, in yet another situation, reliance on external religious authorities to reliance on mystical experience. Similarly, the implicit assumptions about the justification of knowing could range from

rote learning to analysis; or from reproduction of knowledge to creative expression of new knowledge; or from systematic analysis to random association.

In short, separating out Hofer and Pintrich's (1997) conceptualisation of four dimensions of personal epistemology from the definition of those dimensions drawn from the literature has the potential to be inclusive of a more diverse range of epistemological assumptions and hence contribute to describing a more diverse range of epistemological positions or perspectives than previously described.

As discussed in 2.2.1, the conception of personal epistemology that emerges from the holistic school is agentic. Hofer and Pintrich's (1997) framework, however, does not explicitly address the form in which the agency of the knower appears. Rather, Hofer and Pintrich allow for a sense of the knower's agency to emerge indirectly in two ways. Firstly, the knower's agency is implicitly revealed through the justification of knowing which emphasises the process by which individuals come to know; and secondly, the knower's agency is implied when the source of knowledge allows for assumptions that include the self as knower.

As a result, I will revise their framework to explicitly propose that the knower's agency is related to assumptions about the source of knowledge and the justification of knowing that characterises each epistemological position or perspective. In the discussion of each of Perry's (1970) positions and Belenky et al.'s (1986) perspectives, therefore, I will comment on the knower's agency in the terms just outlined. Making the agency of knowers explicit in the proposed analytic framework is consistent with a hermeneutic conception of human beings as, first and foremost, meaning-makers – self-interpreting beings who strive to make sense of themselves and the world.

The purpose of the analysis of Perry and Belenky et al.'s epistemological categories in relation to my proposed conceptual framework is not to reduce the complex findings of holistic researchers to separate implicit assumptions about knowledge and knowing but to test the efficacy of the framework for conducting personal epistemology research. Consequently, the potential for the framework to guide the analysis of the primary resources collected for the current study, namely student writing tasks and interviews with former students is addressed in the conclusion to Section 2.3.

2.3.2 Application of framework to extant epistemological categories

To facilitate the application of my conceptual framework to the epistemological positions of Perry (1970, 1981) and the epistemological perspectives of Belenky et al. (1986), I group Perry's categories as outlined in Section 2.2.1.1. With respect to Belenky et al.'s categories, I exclude Belenky et al.'s silenced knowing from the analysis because there is no equivalent category in Perry. Each of the remaining Belenky et al. categories is considered individually. Consequently, the epistemological categories included in the analysis by signposts are:

- Perry's (1970, 1981) positions:
 - Dualism: Positions 1- 3;
 - Multiplicity: Position 4(a);
 - Multiplicity: Position 4(b);
 - Diffuse relativism: Position 5; and
 - Committed relativism: Positions 6-9.
- Belenky et al.'s (1986) perspectives:
 - Received knowing;
 - Subjective knowing;
 - Procedural knowing; and
 - Constructed knowing.

The form of the analysis of each position or perspective in Section 2.3.2 comprises an introductory paragraph and an accompanying figure to demonstrate how the framework captures key assumptions of each category. The analysis is based on a conception of personal epistemology as comprising implicit assumptions about knowledge and knowing that may take many forms. These vary with the individual, the type of text being analysed, and the cultural context. That is, personal epistemology is co-constituted by culture and situation and mediated by the self as an interpretative being. This idea is operationalised as the proposition that the form in which the agency of a knower appears in a text is related to the interaction of the source of knowledge and the justification of knowing.

In order to facilitate the reading of the descriptions and diagrams, the material is formatted to ensure that each position or perspective is contained on one page starting overleaf.

Following the analysis of the Perry Positions, there is a discussion of how the framework enhances understanding of the Positions and their associated sense of

agency. Similarly, following the analysis of the Belenky et al.'s perspectives there is a discussion of how the framework enhances understanding of each perspective and its associated sense of agency.

2.3.2.1 Perry

Dualism: Applying the concept of signposts to personal epistemology to Dualism:

Position 1 (see Figure 2.1 for diagram), it can be seen that ‘the student sees the world in polar terms of we-right-good vs other-wrong-bad’ (1970, p. 9). That is, the knower identifies with an external source of knowledge. Further, a high degree of certainty is demonstrated by the knower who assumes that ‘Right answers for everything exist in the Absolute’ (p. 9). The structure of knowledge and goodness are perceived as ‘quantitative accretions of discrete rightnesses’ (p. 9) and the justification of knowing is assumed to involve collecting facts ‘by hard work and obedience’ (p. 9) as exemplified by a spelling test. In Positions 2 and 3, the basic dualism is maintained but students perceive a loosening of the ‘tie between Authority and the Absolute’ (Perry 1981, p. 83). That is, uncertainty prompts knowers to begin to distance themselves from absolute Authority but they still assume that there are certain answers ‘somewhere’ (Perry 1981, p. 79). Agency is low in Positions 1-3.

Signpost: Source Implicit assumption: Knower merges with external authority Indicative text: The world is seen 'in polar terms of we-right-good vs other-wrong-bad' (Perry 1970, p. 9).		Signpost: Certainty Implicit assumption: High degree of certainty Indicative text: 'Right answers for everything exist in the Absolute, known to Authority' (p. 9).
	Agency: Low	
Signpost: Justification Implicit assumption: Knowledge is unexamined Indicative text: Right answers are 'to be collected by hard work and obedience (paradigm: a spelling test)' (p. 9).		Signpost: Structure Implicit assumption: Knowledge is simple, discrete, concrete Indicative text: Knowledge is 'perceived as quantitative accretions of discrete rightnesses' (p. 9).

Figure 2-1: Dualism (Position 1) through signposts

Multiplicity Position 4(a): Applying the concept of signposts to personal epistemology to Multiplicity: Position 4(a), it can be seen that there are two sources of knowledge: internal, personal opinion; and external, Authority (see Figure 2.2 for diagram). Or, as Perry says, the position is characterised by ‘two domains’ (1970, p. 98): ‘a domain separate and equal to that of Authority, in which the self takes a stand in chaos’ (pp. 99-100); and ‘the right-wrong world of Authority’ (p. 98). From the perspective of the certainty of knowledge, each ‘world’ allows for a high degree of certainty where ‘the categorization of all ... propositions ... remains atomistic and all-or-none’ (p. 98). The justification of knowing varies according to ‘domain.’ The ‘simple dualism of the right-wrong world of Authority’ (p. 98) prevails in one and in the other “any opinion goes” (p. 99). In both worlds, however, the structure of knowledge is ‘atomistic’ (p. 98). Agency is high in the domain where the knower looks to his or her own opinion for the source of knowledge and adopts an assertive stance in relation to the justification of knowing based on the right to one’s own opinion.

<p>Signpost: Source</p> <p>Implicit assumption:</p> <p>Knower accesses personal opinion OR external knowledge.</p> <p>Indicative text:</p> <p>‘A domain separate and equal to that of Authority’ (Perry 1970, pp. 99-100) vs ‘the right-wrong world of Authority’ (p. 98).</p>		<p>Signpost: Certainty</p> <p>Implicit assumption:</p> <p>High degree of certainty within each ‘world.’</p> <p>Indicative text:</p> <p>In both worlds ‘the categorization of all ... propositions ... remains ... all-or-none’ (p. 98).</p>
	<p>Agency:</p> <p>High in one domain</p>	
<p>Signpost: Justification</p> <p>Implicit assumption:</p> <p>Knowledge is unexamined.</p> <p>Indicative text:</p> <p>‘The ... right-wrong world of Authority’ (p. 98) versus “any opinion goes” (p. 99).</p>		<p>Signpost: Structure</p> <p>Implicit assumption:</p> <p>Knowledge is simple, discrete.</p> <p>Indicative text:</p> <p>Knowledge ‘remains atomistic and all-or-none’ (p. 98).</p>

Figure 2-2: Multiplicity - Position 4(a) through signposts

Multiplicity 4(b): Applying the concept of signposts to personal epistemology to Multiplicity: Position 4(b) (See Figure 2.3), it can be seen that the source of knowledge is assumed to be external, ‘with final responsibility lying outside the thinker’ (Perry 1970, p. 96). There is only one vantage point from which to view knowledge because there is no ‘domain separate and equal to that of Authority’ which means that the knower still assumes that there is a high degree of certainty about knowledge. Nevertheless, the justification of knowledge is beginning to change in that the knower recognises qualitative contextual relativistic reasoning as a special case of what “They want us to work on” (p. 100); that is, a form of ‘gamesmanship’ (p. 107) or artifice in which academia requires the acknowledgement of alternative points of view. Agency is low because thinking ‘remains an act of conformity, with final responsibility lying outside the thinker’ (p. 96). The structure of knowledge is not explicitly discussed for this position.

<p>Signpost: Source Implicit assumption: Knower ultimately accesses external knowledge Indicative text: Thinking is ‘an act of conformity, with final responsibility lying outside the thinker’ (Perry 1970, p. 96).</p>		<p>Signpost: Certainty Implicit assumption: Knowledge is certain albeit Authority requires alternatives to be acknowledged Indicative text: There is no ‘domain separate and equal to that of Authority’ (p. 99).</p>
	<p>Agency: Low</p>	
<p>Signpost: Justification Implicit assumption: Knowledge evaluated to meet authorities’ expectations Indicative text: Evaluation takes the form of “gamesmanship: “I didn’t forget to be balanced’ (p. 107).</p>		<p>Signpost: Structure Implicit assumption: Not explicitly discussed Indicative text: Not explicitly discussed</p>

Figure 2-3: Multiplicity: Position 4 (b) through signposts

Relativism diffuse: Perry says that, at the position of relativism diffuse, the students saw the world as ‘broadly relativistic, and they spoke implicitly and explicitly from that assumption’ (p. 110). In other words, ‘authorities have lost their cosmic aura’ (1970, p. 122) and ‘the student perceives all knowledge and values (including authority’s) as contextual and relativistic’ (p. 9). The structuring of the world, however, ‘was devoid of that focusing element of individual relevance’ (p. 110). Applying the concept of signposts to personal epistemology to relativism diffuse (see Figure 2.4), it can be seen that the source of knowledge is assumed to be external but not absolute, the justification of knowing is assumed to be broadly relativistic but not anchored by personal relevance, and knowledge is assumed to be certain but procedures for establishing certainty in context are not yet developed. The structure of knowledge is unclear. Agency is emergent because there are multiple vantage points from which to view the world but the knower’s strategies for evaluating them are emergent.

<p>Signpost: Source</p> <p>Implicit assumption:</p> <p>Knowledge is external but multiple</p> <p>Indicative text:</p> <p>‘The world as they saw it was broadly relativistic, and they spoke implicitly and explicitly from that assumption’ (p. 110).</p>		<p>Signpost: Certainty</p> <p>Implicit assumption:</p> <p>Knowledge is uncertain</p> <p>Indicative text:</p> <p>‘authorities have lost their cosmic aura’ (p. 122).</p>
	<p>Agency: Emergent</p>	
<p>Signpost: Justification</p> <p>Implicit assumption:</p> <p>Emergent procedures for evaluating information</p> <p>Indicative text:</p> <p>‘The student perceives all knowledge and values (including authority’s) as contextual and relativistic’ (p. 9).</p>		<p>Signpost: Structure</p> <p>Implicit assumption:</p> <p>Unclear relationships</p> <p>Indicative text:</p> <p>‘This structuring of the world, however, was devoid of that focusing element of individual relevance’ (p. 110)</p>

Figure 2-4: Relativism diffuse through signposts

Committed relativism: Positions 6 – 9 represent phases in the student’s engagement with Commitment. For Perry, the word “Commitments,” refers to ‘affirmations: in all the plurality of the relativistic world – truths, relationships, purposes, activities, and cares, in all their contexts – one affirms what is one’s own’ (p. 135). Applying the concept of signposts to personal epistemology (see Figure 2.5), it can be seen that the source of knowledge includes the external relativistic world and the internal world of one’s life choices, the justification of knowing is assumed to be relativistic but now anchored by personal relevance, and it is assumed that, while knowledge is not absolutely certain, it is contextually certain because procedures for establishing certainty in the context of personal relevance have been developed. The structure of knowledge is complex and interrelated. Agency is high because the knower is engaged in ‘an act, or ongoing activity, relating a person as agent and chooser to aspects of his life’ (p. 135).

<p>Signpost: Source</p> <p>Implicit assumption:</p> <p>Knowledge is external and internal</p> <p>Indicative text:</p> <p>‘One affirms what is one’s own’ (Perry 1970, p. 135). ‘The student apprehends the necessity of orienting himself in a relativistic world through ... personal Commitment’ (p. 10).</p>		<p>Signpost: Certainty</p> <p>Implicit assumption:</p> <p>Knowledge is uncertain</p> <p>Indicative text:</p> <p>The student rejects ‘unquestioned or unconsidered commitment to simple belief in certainty’ (p. 10).</p>
	<p>Agency: High</p>	
<p>Signpost: Justification</p> <p>Implicit assumption:</p> <p>Actively evaluating information and making judgments</p> <p>Indicative text:</p> <p>‘The term “Commitment” refers to an act, or ongoing activity relating a person as agent and chooser to aspects of his life’ (p. 135).</p>		<p>Signpost: Structure</p> <p>Implicit assumption:</p> <p>Complex and emergent</p> <p>Indicative text:</p> <p>The student experiences the implications of Commitment as ‘an ongoing, unfolding activity through which he expresses his life style’ (p. 10).</p>

Figure 2-5: Committed relativism through signposts

Discussion

The preceding descriptive paragraphs and diagrammatic representations of Perry's positions have sought to demonstrate the capacity of my proposed conceptual framework to capture their key assumptions and characteristics. The following discussion focuses on the role of the source signpost in highlighting that Perry (1970) is primarily concerned with the knower's engagement with external authority as the source of knowledge.

In dualism, Perry expressed this relationship as the knower implicitly assuming 'we-right-good'. In other words, in dualism, there is a merging of the knower with external authority. In multiplicity 4(b) and relativism diffuse, the knower also engages with external, acquired or abstract knowledge. The introduction of competing ideas mainly drawn from the external realm of academia creates uncertainty for the knower and drives a more objective engagement with external authority through the evaluation of competing external vantage points.

An exception to the characterisation of Perry's positions as engaged with external, acquired or abstract knowledge may appear to be multiplicity 4(a) where the 'student perceives legitimate uncertainty (and therefore diversity of opinion) to be extensive and raises it to the status of an unstructured epistemological realm' (p. 9). Within this realm, however, an internal experiential source of knowledge is not accessed to critique external knowledge but rather abstract ideas and acquired knowledge are used to argue that "Everyone has a right to his own opinion." In other words, multiplicity 4(a) has a passionate quality because it is grounded in a concept of rights, not because it is grounded in experiential knowledge.

As regards the changes that occur in the development of committed relativism, Perry's (1970) definition of commitments as 'truths, relationships, purposes, activities, and cares, in all their contexts' (p. 135) suggests that he is talking about much more than intellectual commitments. He is talking about commitments based on experience as well as on thinking. This is confirmed by a quotation from one of his students who distinguishes between intellectually understanding something and committing to something emotionally after 'the things inside [you] just sort of slowly shift[ing] around' and you realise, 'I really *am* that way' (Perry 1981, p. 94). This interpretation of committed relativism, revealed by my conceptual framework, could be described as

structural change or the accessing of internal (experiential) knowledge rather than external knowledge.

Turning to agency, prior to the emergence of committed relativism, agency in Perry is not primarily associated with a change in the source of knowledge from external to internal experiential knowledge but with a change in the justification of knowing. That is, the justification of knowing increasingly entails the knower's evaluation of external knowledge. Or as Kirschner and Martin (2010, p.13) assert from a sociocultural perspective, 'it is the human agent who selects from the interpretations, practices, positions, and possibilities available to her'. That is, agency emerges through the development of procedures or criteria, including personal relevance, for making decisions. In committed relativism, however, there are intimations of a sense of agency as driven by personal experience as well as intellectual evaluation in the choices and judgments that the student makes.

2.3.2.2 *Belenky and colleagues*

As in Section 2.3.2.1, the analysis of the epistemological perspectives of Belenky et al. takes the following form: an introductory paragraph and accompanying figure to demonstrate how the framework captures key assumptions of each perspective. In order to facilitate the reading of the descriptions and diagrams, the material is formatted to ensure that each position or perspective is contained on one page starting overleaf.

Following the analysis of Belenky et al.'s perspectives there is a discussion of how the framework enhances understanding of each perspective and its associated sense of agency.

Received knowing: In Belenky et al. (1986), received knowers assume that the source of knowledge is external and distant, that is, they assume ‘Authority-right-they’ (p. 44). These knowers also assume that knowledge is ‘concrete and dualistic. Things are right or wrong’ (p. 37) thereby implying a single vantage point. Their justification of knowing is associated with ‘passively receiving and storing information’ (Bond, L, Belenky & Weinstock 2000, p. 710) rather than with ‘the exercise of reason’ (Belenky et al. 1986, p. 42). For received knowers the structure of knowledge is mostly ‘quantitative’ (Belenky et al. 1986, p. 41). The implied agency of the knower is low because she looks to external authority for knowledge and adopts a passive role as a listener rather than a speaker. As Belenky et al. say, although received knowers value listening to others, they ‘have little confidence in their own ability to speak’ (p. 37). The analysis of received knowing by signposts to personal epistemology is represented in Figure 2.6.

<p>Signpost: Source</p> <p>Implicit assumption:</p> <p>Knowledge is external and distant</p> <p>Indicative text:</p> <p>‘Authority-right-they’ (Belenky et al. 1986, p. 44).</p>	<p>Signpost: Certainty</p> <p>Implicit assumption:</p> <p>Knowledge is certain</p> <p>Indicative text:</p> <p>What is heard ... is ‘concrete and dualistic. Things are right or wrong’ (Belenky et al. 1986, p. 37).</p>
Agency:	
Low	
<p>Signpost: Justification</p> <p>Implicit assumption:</p> <p>Knowledge is unexamined</p> <p>Indicative text:</p> <p>‘where people equate learning with passively receiving and storing information’ (Bond, L, Belenky & Weinstock 2000, p. 710) rather than with ‘the exercise of reason’ (Belenky et al. 1986, p. 42)</p>	<p>Signpost: Structure</p> <p>Implicit assumption:</p> <p>Knowledge is concrete and quantitative</p> <p>Indicative text:</p> <p>What is heard by the received knower is ‘concrete’ (Belenky et al. 1986, p. 37). Received knowers have a preference for ‘quantitative’ information (p. 41).</p>

Figure 2-6: Received knowing through signposts

Subjective knowing: Belenky et al.'s (1986) subjective knowers assume that knowledge is internal and that 'Truth now resides within the person and can negate answers that the outside world supplies' (p. 54). They also experience a high degree of certainty because they assume only one vantage point – that of inner knowledge – 'the fountain of truth simply has shifted locale' (p. 54). For subjectivists, the justification for knowing is experiential, that is, 'Truth' for subjective knowers, is an intuitive reaction – something experienced, not thought out, something felt rather than actively pursued or constructed' (p. 69). The structure of knowledge is discrete: 'personal' and 'private' (p. 54). Agency is high because internal authority is the source of knowledge and opinions are justified by personal experience. That is, the interior voice is 'the hallmark of women's emergent sense of self and sense of agency and control' (p. 68). The analysis of subjective knowing by signposts is represented in Figure 2.7.

<p>Signpost: Source</p> <p>Implicit assumption:</p> <p>Knowledge resides internally</p> <p>Indicative text:</p> <p>'Truth now resides within the person' (Belenky et al. 1986, p. 54).</p>		<p>Signpost: Certainty</p> <p>Implicit assumption:</p> <p>High degree of certainty</p> <p>Indicative text:</p> <p>'There is still the conviction that there are right answers; the fountain of truth simply has shifted locale' (p. 54).</p>
	<p>Agency: High</p>	
<p>Signpost: Justification</p> <p>Implicit assumption:</p> <p>Knowledge is unexamined personal experience</p> <p>Indicative text:</p> <p>'Truth ... is an intuitive reaction – something experienced, not thought out, something felt rather than actively pursued or constructed' (p. 69).</p>		<p>Signpost: Structure</p> <p>Implicit assumption:</p> <p>Knowledge is discrete (personal and private)</p> <p>Indicative text:</p> <p>'Truth as personal, private, and subjectively known or intuited' (p. 54).</p>

Figure 2-7: Subjective knowing through signposts

Procedural knowing: Belenky et al.'s (1986) procedural knowers assume that the source of knowledge is external in that 'other voices and external truths prevail' (p. 134). As a corollary, their sense of self is embedded in 'identifications with institutions, disciplines, and methods.' Their sense of certainty is the product of 'reasoned reflection' (p. 88) and procedural knowers are 'absorbed in the business of acquiring and applying procedures for obtaining and communicating knowledge' (p. 95). Importantly, Belenky et al. identify two distinct procedures for the justification of knowing - separate and connected knowing. The structure of knowledge is complex, 'things are not always as they seem' (p. 94). Agency is high because the knower gains self-confidence from her facility to justify knowledge according to procedures of 'reasoned reflection' (p. 88). The analysis of procedural knowing by signposts to personal epistemology is represented in Figure 2.8.

<p>Signpost: Source</p> <p>Implicit assumption:</p> <p>Knowledge primarily external</p> <p>Indicative text:</p> <p>'Other voices and external truths prevail.' Sense of self is embedded in 'identifications with institutions, disciplines, and methods' (Belenky et al. 1986, p. 134).</p>		<p>Signpost: Certainty</p> <p>Implicit assumption:</p> <p>Certain within given parameters</p> <p>Indicative text:</p> <p>'They had abandoned both subjectivism and absolutism in some areas of their lives in favor of reasoned reflection' (p. 88).</p>
	<p>Agency: High</p>	
<p>Signpost: Justification</p> <p>Implicit assumption:</p> <p>Procedures for evaluating knowledge</p> <p>Indicative text:</p> <p>Women were 'acquiring and applying procedures for obtaining and communicating knowledge' (p. 95).</p>		<p>Signpost: Structure</p> <p>Implicit assumption:</p> <p>Complex, integrated conceptual</p> <p>Indicative text:</p> <p>'Truth is not immediately accessible ... you cannot always "just know." Things are not always as they seem' (p. 94).</p>

Figure 2-8: Procedural knowing through signposts

Constructed knowing: In constructed knowing there is ‘an impetus to try to deal with life, internal and external, in all its complexity.’ That is, to draw on internal and external sources of knowledge. Rather than seek the certainty of knowledge, constructivists ‘are not troubled by ambiguity’ (p. 139). In terms of the justification of knowing, constructed knowers draw on multiple perspectives and goals to interpret knowledge by reaching ‘deep into the experience of each participant; it [constructed knowing] also draws on the analytical abilities of each’ (p. 144). Conflict is resolved ‘not by invoking a logical hierarchy of abstract principles but through trying to understand the conflict in the context of each person’s perspective, needs, and goals’ (p. 149). The structure of knowledge is assumed to be interrelated as constructivists ‘make connections that help tie together pockets of knowledge (p. 140)’ Agency is high because ‘they want to develop a voice of their own’ (p. 137). The analysis of constructed knowing by signposts to personal epistemology is represented in Figure 2.9.

<p>Signpost: Source</p> <p>Implicit assumption:</p> <p>Knowledge internal and external</p> <p>Indicative text:</p> <p>‘an impetus to try to deal with life, internal and external, in all its complexity’ (Belenky et al. 1986, p. 137).</p>		<p>Signpost: Certainty</p> <p>Implicit assumption:</p> <p>Knowledge is ambiguous, complex</p> <p>Indicative text:</p> <p>Constructivists ‘are not troubled by ambiguity and are enticed by complexity’ (p. 139).</p>
	<p>Agency: High</p>	
<p>Signpost: Justification</p> <p>Implicit assumption:</p> <p>Interpretative in context</p> <p>Indicative text:</p> <p>Constructed knowing, ‘reaches deep into the experience of each participant; it also draws on the analytical abilities of each’ (p. 144).</p>		<p>Signpost: Structure</p> <p>Implicit assumption:</p> <p>Complex, interrelated, conceptual</p> <p>Indicative text:</p> <p>Constructed knowers ‘make connections that help tie together pockets of knowledge’ (p. 140).</p>

Figure 2-9: Constructed knowing through signposts

Discussion

The preceding descriptive paragraphs and diagrammatic representations of Belenky et al.'s perspectives have sought to demonstrate the capacity of my proposed conceptual framework to capture the key assumptions and characteristics of each perspective.

The following comparative discussion of the epistemological categories of Perry (1970) and Belenky et al. (1986) focuses on the source signpost to personal epistemology and the concept of agency.

In Belenky et al.'s (1986) research, participants never identify with external authority. That is, unlike Perry's dualists, Belenky et al.'s received knowers have a tenuous relationship to distant external authority – 'Authority-right-they' (p. 44). Belenky et al.'s subjective knowers, however, identify with an internal source of knowledge and in this sense could be said to merge themselves with the source of knowledge. Another difference between Perry and Belenky et al.'s epistemological categories is the appearance of experiential knowledge in Belenky et al. Subjective knowing hinges around an internal source of experiential knowledge that is 'associated with recent changes in [the knowers'] personal lives outside the classroom' (Belenky et al. 1986, p. 56). Subjective knowers also learn from drawing 'comparisons between their own and other people's experience' (p. 85).

Turning now to the concept of agency, it is apparent that in Perry, prior to the emergence of committed relativism, agency appears where the knower develops evaluative procedures for the justification of knowing in response to the uncertainty caused by more than one external vantage point. In Belenky et al., there are two sources of agency – internal experiential knowledge, and the development of evaluative procedures. Sometimes the two are intertwined. This makes for a more complex picture than in Perry's work. In subjective knowing, agency appears as an intense sense of certainty in the single internal vantage point. In procedural knowing agency appears through the use of evaluative procedures (justification for knowing).

Importantly, however, Belenky et al. (1986) identified two distinct procedures for justifying knowledge – separate and connected knowing. Connected knowing includes accessing experiential knowledge as well as more impersonal evaluative knowledge for understanding. In this way, the connected knower's sense of agency emerges through a combination of evaluative procedures and accessing internal experiential knowledge.

For constructed knowers too, agency appears as a combination of internal knowledge, external knowledge and evaluative procedures used in specific contexts.

2.3.3 Focus on the justification of knowing

Section 2.3.2 demonstrated the effectiveness of my analytic framework for understanding holistic epistemological positions and perspectives and the emergence of agency. The focus of Section 2.3.3 is a more detailed consideration of assumptions about the justification of knowing that inform the work of Perry (1970), Belenky et al. (1986) and Kuhn and colleagues (Kuhn 1991; Kuhn, Cheney & Weinstock 2000). The rationale for the focus on the justification of knowing is twofold. Firstly, the justification of knowing emerged as an important element in my data and therefore is worth considering in some detail here. Secondly, as discussed in Section 2.2.1 one of the distinctive features of the work of the holistic school compared to the individuated school is its emphasis on the justification of knowing. This is epitomised in the work of Kuhn and her colleagues whose focus on the use of ill-structured problems to explore personal epistemology places the justification of knowing at the centre of differences in personal epistemology.

In the following discussion the epistemological categories of the three named researchers are considered in groupings for purposes of comparison.

- Group 1: dualism – Perry (1970); received knowing – Belenky et al. (1986); and absolutism – Kuhn and colleagues (1991; 2000) .
- Group 2: multiplicity 4(a) and multiplicity 4(b) (Perry), subjective knowing (Belenky et al.); and multiplism (Kuhn).
- Group 3: relativism (Perry); procedural knowing (Belenky et al.); and evaluativism (Kuhn).
- Group 4: committed relativism (Perry) and constructed knowing (Belenky et al.).

Group 1: All three researchers theorise a category of epistemological development focussed on the external world in which the justification of knowing is characterised by unexamined acceptance of external authority. The categories are dualism (Perry), received knowing (Belenky et al.) and absolutism (Kuhn).

Group 2: Differences emerge among the three researchers with respect to this grouping of epistemological categories. For subjective knowers personal experience is the touchstone of knowledge and their opinions flow from that experience not from an abstract right to their own opinion. Belenky et al. (1986) put it this way, 'Truth for subjective knowers is an intuitive reaction – something experienced, not thought out, something felt rather than actively pursued or constructed' (p. 69). The corollary of the subjective knower's trust in personal or shared experiences is that many women subjectivists 'expressed a distrust of books and the written word in favor of learning through direct sensory experience or personal involvement with the objects of study' (p. 74). Accordingly, the way they begin to gain perspective on their experience is through comparing and contrasting their experiences with others as a 'precursor to reflective and critical thought' (p. 85).

This contrasts with Perry's multiplicity 4(a), in which it is the knower's right to personal opinion to which the knower appeals for justification of his/her point of view rather than explicit lived experience. Subjective knowing also contrasts with Perry's (1970) multiplicity 4(b) where the student discovers qualitative contextual relativistic reasoning as a special case of "what They want" (p. 97). In Perry's study, multiplicity 4(b) was more common than multiplicity 4(a) (p. 100) perhaps because, in the Harvard context, books and the written word were more valued as the source of different perspectives on truth than lived experience or unsubstantiated personal opinion. In other words, subjective knowing, through the mechanism of comparing and contrasting experience, suggests a more visceral and experientially grounded basis for defending a point of view than Perry's multiplicity.

The subjective knower's approach to the justification of knowing can also be contrasted with Kuhn's multiplist for whom 'claims are subjective opinions freely chosen by their holders and everyone has a right to their opinion, all opinions are equally right' (Kuhn, Cheney & Weinstock 2000, p. 310). The difference here is that for subjective knowers there is an experiential basis for truth, an anchor for their views in lived experience. For multiplists, on the other hand, no anchor for truth is specified. There is no basis for supporting one opinion over the other. Rather, truth is a matter of subjective opinion freely chosen. Kuhn's multiplism is thus comparable to Perry's multiplicity 4(a).

Underpinning Kuhn and her colleagues' argument is research on children's theory of mind which demonstrates that in America, after children reach school age, 'Conflicting representations of the same event come to be understood as legitimate products of

individuals' unique meaning-making efforts – because interpretive mental processes vary across individuals, their products may also differ Perhaps all knowing is only opinion' (Kuhn, Cheney & Weinstock 2000, p. 313). Compared then to Belenky et al. who describe subjective knowing as being related to the specific circumstances of individual experience, the multiplist position emerges as a generic developmental process broadly consistent with a cultural view that 'claims are subjective opinions freely chosen by their holders'(Kuhn, Cheney & Weinstock 2000, p. 310).

Group 3: With respect to the categories of relativism, (Perry, 1970); evaluativism (Kuhn and colleagues, 2000); and procedural knowing (Belenky et al., 1986), there is a common emphasis on the change in the certainty of knowledge that flows from recognition of multiple vantage points. For Perry, the change is a precursor to evaluative thinking but at the stage of relativism diffuse (Position 5) participants in Perry's (1970) study had limited strategies for the justification of knowing.

For Kuhn and colleagues (2000), the evaluativist acknowledges uncertainty but, unlike the multiplist, does not forsake evaluation. 'Thus, two people can both have legitimate positions – can both "be right" – but one position can have more merit ("be more right") than the other to the extent that position is better supported by the argument and evidence' (p.312). That is, Kuhn et al.'s category of evaluativism takes uncertainty for granted and focuses on the process of justifying knowledge. For Kuhn et al., 'at the heart of the evaluativist epistemological position is the view that reasoned argument is worthwhile and the most productive path to knowledge' (p. 325).

At first glance, Belenky et al.'s procedural knowing seems analogous to relativism in Perry and evaluativism in Kuhn. The back drop to Belenky et al.'s procedural knowing perspective is the understanding that there is no absolute certainty to knowledge. Rather, to fully understand a phenomenon, it has to be viewed from a variety of angles (Belenky et al. 1986, p. 98). The key feature of the justification of knowing in procedural knowing is engagement in 'conscious, deliberate, systematic analysis' (p. 93). For procedural knowers the assumption is that 'truth is not immediately accessible, that you cannot always "just know." Things are not always as they seem to be' (p. 94). Understanding, therefore, requires objectivity and procedural knowers become 'absorbed in the business of acquiring and applying procedures for obtaining and communicating knowledge' (p. 95). To this point then, Belenky et al.'s procedural knowing shares similar characteristics to relativism in Perry and evaluativism in Kuhn.

Belenky et al., however, distinguish two distinct sets of procedures for establishing truth. The first is separate knowing that, like the knowing of Perry's relativists and Kuhn's evaluativists, involves critical thinking to establish truth through objective procedures. That is, separate knowers assume that 'everyone – including themselves – may be wrong' (Belenky et al. 1986, p. 104), and this in turn requires the development of techniques for analyzing and evaluating arguments. In the process, procedural knowers maintain their objectivity by suppressing the self, taking as impersonal a stance as possible toward the object.

In contrast to separate knowers, connected knowers are more oriented to understanding than evaluation. Or as Belenky et al. say, the purpose is not justification but connection. 'Truth emerges through care' (Belenky et al. 1986, p. 102). This being the case, 'connected knowers develop procedures for gaining access to other people's knowledge. At the heart of these procedures is the capacity for empathy' (p. 113). Consequently, the connected knower's approach to the justification of knowing is to listen in order to understand. That is, connected knowers assume that "if you listen to people, you can understand why they feel the way they do" (p. 114). The objective here is to listen for reasons that have to do with experience rather than propositional logic. Connected knowers do, however, also strive for objectivity in that they replace the subjective knower's identification with positions that feel right with 'the deliberate, imaginative extension of one's understanding into positions that initially feel wrong or remote' (p. 121). In the connected knowing form of procedural knowing the goal is to understand situations rather than to evaluate them as in separate knowing. There is no equivalent to connected knowing in Perry or Kuhn.

Group 4: The final epistemological categories that I will compare in terms of the justification of knowing are Perry's committed relativism and Belenky et al.'s constructed knowing. There is no equivalent category in Kuhn and her colleagues' work. In constructed knowing, the key feature of the justification of knowing is making 'connections that help to tie together pockets of knowledge' (Belenky et al. 1986, p. 140) and in the process moving beyond consideration of the ideas of others to construct 'a way of thinking about knowledge, truth, and self that guides the person's intellectual and moral life and personal commitments' (p. 136). Constructed knowing then has shades of Perry's (1970) committed relativism that involves an 'act, or ongoing activity relating a person as agent and chooser to aspects of his life' (p. 135). But Belenky et al. 's (1986) constructed knowing is more explicitly experiential in so much as separate and connected knowing strategies are drawn together by reaching

‘deep into the experience of each participant [to draw] on the analytical abilities of each’ (p. 144). Further, conflict is resolved ‘not by invoking a logical hierarchy of abstract principles but through trying to understand the conflict in the context of each person’s perspective, needs, and goals’ (p. 149). In other words, a form of practical reasoning is applied (Dunne & Pendlebury 2007) that is not captured explicitly in Perry’s committed relativism. Kuhn et al.’s evaluativism captures neither the knowledge construction element of Belenky et al.’s constructed knowing nor its suggestion of a form of judgment that focuses less on critical thinking to distinguish between discrepant knowledge claims and more on balancing competing needs and priorities.

This then completes my comparison of three theorists in the holistic tradition of personal epistemology through my conceptual framework. As a whole, Section 2.3. has proposed and demonstrated a conceptual framework that captures key features of the epistemological categories to which it is applied, including differences and similarities among the work of Perry, Belenky et al. and Kuhn et al. It has also demonstrated how the agency of the knower is related to the interaction of implicit assumptions about knowledge and knowing and drew attention specifically to the justification of knowing as it appears in different epistemological positions and perspectives. Consequently, I argue that there is a strong case for the likely efficacy of using the framework to guide the analysis of the primary resources collected for the current study.

2.4 Conclusion and conceptual framework

The conceptual framework proposed in this thesis is informed by earlier scholarship. The holistic school of personal epistemology, for instance, contributed the following ideas: That personal epistemology can be understood as implicit assumptions that individuals hold about the nature of knowledge and knowing; that implicit assumptions about knowledge and knowing can be inferred from what people say in interviews or from their written statements; and that individuals have a cluster of assumptions about the nature of knowledge and knowing that cohere in meaningful ways. These clusters of assumptions form patterns that can be described as positions or perspectives.

The concept of epistemological beliefs articulated by the individuated school of personal epistemology was adapted to propose that each position or perspective can be analysed in terms of implicit assumptions about the nature of knowledge (its certainty and structure) and the nature of knowing (its source and justification). This conceptualisation is consistent with Hofer and Pintrich (1997) and guided the

operational concept of 'signposts' that can identify implicit assumptions about the nature of knowledge and knowing.

Based on my understanding of Baxter Magolda's (2004) concept of development as the process by which contexts shape personal epistemology (in interaction with a person's current meaning-making), and the hermeneutic and interpretive tradition, it is also proposed that implicit assumptions about knowledge and knowing take many forms. These vary with the individual, the type of text being analysed, and the cultural context. That is, personal epistemology is co-constituted by culture and situation mediated by the self as an interpretative being. This idea is operationalised as the proposition that the form in which the agency of the author or interviewee appears in the text or interview transcript is related to the interaction of the source of knowledge and the justification of knowing.

In summary, the elements of the conceptual framework for this thesis are:

Personal epistemology is defined as:

- The implicit assumptions that individuals hold about the nature of knowledge and knowing. These can be inferred from what people say in interviews or from their written statements.

Epistemological lenses are defined as:

- Clusters of assumptions about the nature of knowledge and knowing held by individuals that cohere in meaningful ways. These clusters of assumptions form patterns that I term epistemological lenses.

Signposts are defined as:

- Conceptual tools to be applied to the research materials to identify implicit assumptions about the nature of knowledge – its certainty and structure — and the nature of knowing – its source and justification.

Signpost descriptors

- The certainty signpost draws attention to implicit assumptions about how certain the knower can be about knowledge, and the type of certainty that is being sought.
- The structure signpost draws attention to implicit assumptions about how the components of knowledge relate to each other, and assumptions about whether knowledge is understood as concrete or abstract.

- The source signpost draws attention to implicit assumptions about where knowledge comes from, and the relationship of the knower to the source of knowledge.
- The justification signpost draws attention to implicit assumptions about the processes by which the knower can know.

Agency is described as:

- Related to the interaction of the knower's assumptions about the source of knowledge and the justification of knowing.

Development is described as:

- The process by which contexts shape personal epistemology (in interaction with a person's current meaning-making) rather than a process by which an individual's personal epistemology follows a predictable trajectory of growth.

The core elements of the conceptual framework are schematically represented in Figure 2.10.

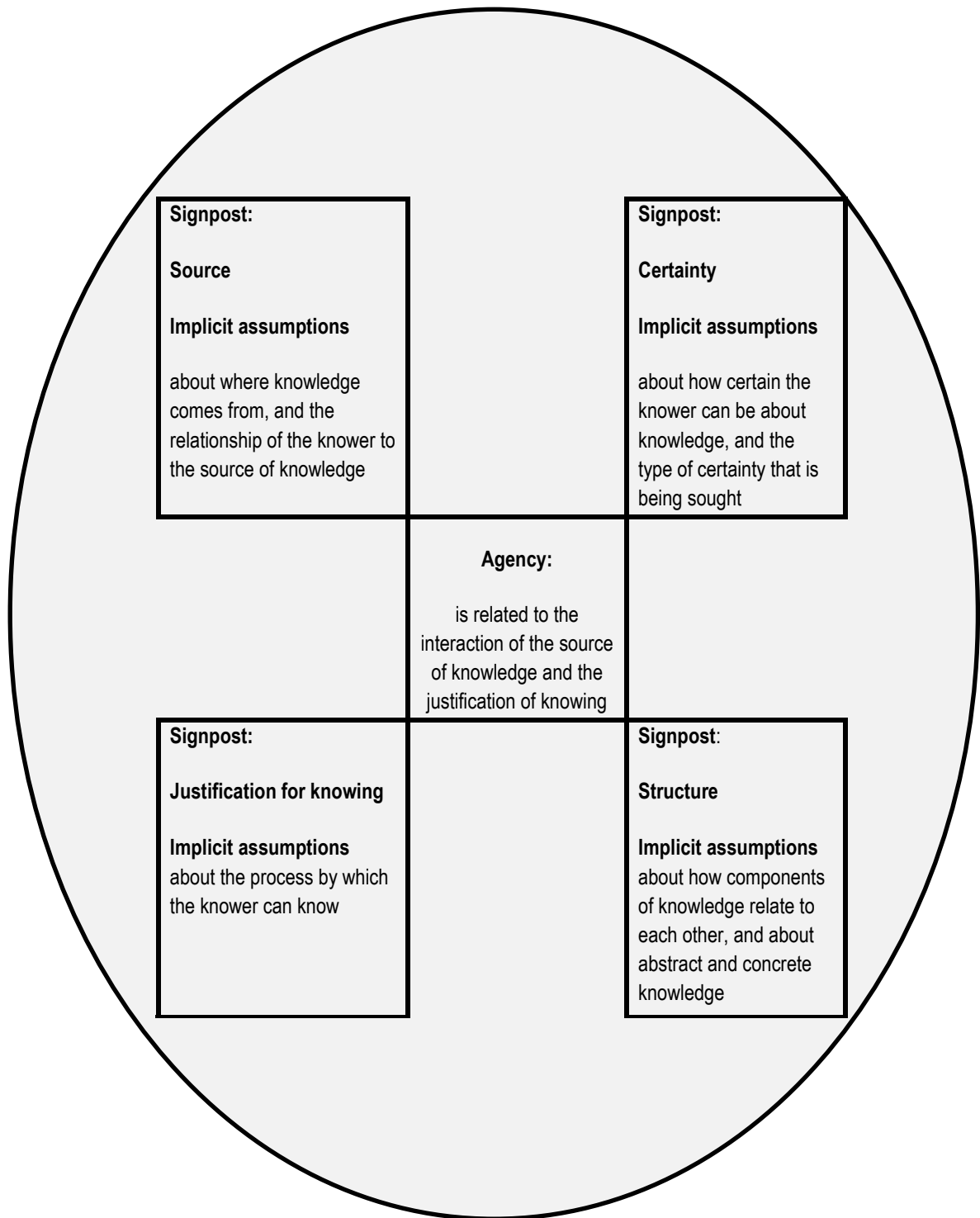


Figure 2-10: Diagram of the conceptual framework

Chapter 3: Methodology

The overall aim of the current study was to explore the question, **How can we understand the personal epistemology of tertiary preparation students** through analysis of the writing tasks of a cohort of tertiary preparation students and subsequent interviews with some of them?

The research questions are:

- How may previous scholarship inform the development of a holistic conceptual framework for the study of the personal epistemology of tertiary preparation students?
- How may naturalistic texts provide insights into the personal epistemology of tertiary preparation students?
- How may interviews contribute to our understanding of the personal epistemology of tertiary preparation students?
- What understandings about the personal epistemology of tertiary preparation students emerge from the application of the proposed conceptual framework to the research materials?

3.1 Qualitative research

This study of the personal epistemology of tertiary preparation students employs a qualitative methodology because, to paraphrase Miles and Huberman (1994), the objective of qualitative research is to gain a holistic or integrated understanding of a phenomenon of everyday life by intense involvement with participants. In other words, the qualitative researcher attempts to understand a situation from the participants' perspective and then to isolate certain themes in order to arrive at a compelling interpretation of the phenomenon. Most analysis is done using words (pp. 6-7).

Qualitative research was appropriate to this study which sought to go beyond giving a quantitative snapshot or cross-section of events (Gray 2009). Such a quantitative snapshot was demonstrated by my earlier study of the higher education completion rate of former tertiary preparation students (Newell 2012). This study raised questions that required qualitative data (see section 1.1) to extend understanding of the personal epistemology of tertiary preparation students. The 'emergent' nature of qualitative research design (Gray 2009) enhanced the research by allowing data collection from the writing tasks to inform and refine later stages of the research. The tradition of

qualitative research also provided tools for systematic data analysis of the extensive research materials collected for the study. This point is discussed in more detail in Section 3.5. Qualitative research design also encouraged me to produce a conceptual framework to confront the patterns emerging in the data with 'a formalized body of knowledge in the form of constructs or theories' (Miles & Huberman 1994, p. 9). My conceptual framework, for instance, drawing upon Hofer and Pintrich's (1997) conceptualisation of personal epistemology, enabled me to propose similarities and differences between the participants' conceptualisations of knowledge and knowing and theoretical models.

Qualitative research, however, 'may be conducted in dozens of ways, many with long traditions behind them' (Miles & Huberman 1994, p. 5). In the case of the current study, it is underpinned by a broadly interpretative paradigm that drew on insights from constructivism, phenomenology and hermeneutics. The term 'interpretive paradigm' is used by Cohen, Manion and Morrison (2000) to encompass research perspectives that 'seek to understand the subjective world of human experience' (p. 22) and to understand how reality is interpreted in a certain time and place and compare this understanding with how reality is interpreted in different times and places. Within this overarching framework, I draw on constructivism, phenomenology and hermeneutics as outlined below. In summary, constructivism focuses on how the situation of the researcher and the participant both influence interpretation, phenomenology focuses on the participant's immediate experience and hermeneutics on the iterative nature of interpretation.

Consistent with the interpretive framework, the constructivist presupposition of the study is that, 'Knowledge is neither inside a person nor outside in the world, but exists in the relationship between persons and world' (Kvale & Brinkmann 2009, p. 53). In the current study, knowledge is generated by the participants, my interaction with the participants and by the insights of earlier researchers. In other words, the analysis and interpretation of the writing tasks assumed that they were not the expressions of isolated individuals but that they existed in 'a fabric of relations' (Lyotard, 1984, p.15 quoted in Kvale & Brinkmann 2009, p. 53) that contributed to the epistemological assumptions that underpinned them. The interviews were designed, conducted and analysed on the assumption that the process of knowing 'is intersubjective and social' (Kvale & Brinkmann 2009, p. 18) and that the participants and I were co-constructors of knowledge.

The study also drew on phenomenology in the sense of trying to understand 'social phenomena from the actors' own perspectives and describing the world as experienced by the subjects' (Kvale & Brinkmann 2009, p. 26). Accordingly, the interview schedule was designed to elicit rich personal accounts of the life experiences that forged the participants' personal epistemologies. These experiences encompassed immigration, refugee status, English as a Second Language (ESL) backgrounds, often deeply held religious beliefs, interrupted secondary education and experience of disruption or trauma. In other words, the interview design and analysis was 'in keeping with a phenomenological understanding, with the life world as the point of departure' (Kvale 1996, p. 55). Moreover, phenomenologically inspired interviews are consistent with the constructivist understanding of knowledge as interactive and inter-relational and with qualitative research methods.

The methodology adopted for the study also drew on the tradition of hermeneutical interpretation. Hermeneutics, however, 'does not involve any step-by-step method, but is an explication of general principles found useful in a long tradition of interpreting texts' (Kvale & Brinkmann 2009, p. 211). As outlined by Kvale and Brinkmann 'From a hermeneutical viewpoint, the interpretation of meaning is the central theme with a specification of the kinds of meanings sought and attention to the questions posed to a text' (2009, p. 50). In the case of this study, the meanings are multi-layered. They included the meanings that participants drew from their experiences of knowing and knowledge as well as meanings that were generated from the application of my conceptual framework and from my understanding of the theory of personal epistemology.

But as the hermeneutical tradition reminds us, these multi-layered meanings require conscious consideration of the specific questions that are being asked of the texts at different stages of the study. As Kvale and Brinkmann, suggest, 'There are multiple questions that can be posed to a text ... with different questions leading to different meanings. A researcher's presuppositions enter into the questions he or she poses to a text and thus codetermine the subsequent analysis' (2009, p. 212). Recognition of this principle assisted in clarifying the questions that I asked of the writing tasks and the interviews in an iterative process that unfolded successive layers of meaning in the research materials.

3.2 Research design

There are three stages to the research. The first considered a range of theoretical approaches to the study of personal epistemology with a view to developing an appropriate conceptual framework for the current study (see Chapter 2). In other words, in stage 1, I addressed the first research question and provided the foundation for the next two stages.

From the second stage, I limited the scope of the study by selecting a cohort of students who were enrolled in Certificate IV in Health Science Foundations (HSF) in 2009 (see section 3.3 for details). In stage 2, I then analysed students' pre-existing naturalistic texts (writing tasks) which addressed 'ill-structured problems,' that is, problems to which there is no definitive solution (Kuhn 1991, p. 7). In other words, in this stage, I aimed to answer the second research question. In stage 3, I analysed the transcripts of eight semi-structured interviews with former HSF students in order to answer the third research question. Stage 3 concluded by drawing on insights from all three stages of the research to answer the fourth research question: What understandings about the personal epistemology of tertiary preparation students emerge from the application of the proposed conceptual framework to the research materials?

The second and third stages of the study involved primary sources. In order to ensure confidentiality for the participants, all references to them in the thesis use pseudonyms. The pseudonyms that I gave participants were consistent with their practice for naming themselves. That is, if a student had anglicised her name, she was given an anglicised pseudonym. Further, when I have quoted from student writing tasks in the thesis, I have replaced material that potentially identifies students, such as the name of their country of origin, with the phrase 'country of origin' in square brackets. I have followed the same procedure when quoting from the transcripts of interviews.

In order to avoid the somewhat clumsy phrase she/he or her/him, in the following analysis I use the pronoun 'she' and the possessive article 'her' in all cases except where I am specifically referring to a male student. This is consistent with the gender of the cohort being studied. Of the 76 students whose writings tasks could be categorised for the study, 68 were women (89%) and eight (11%) were men.

When I have quoted from student writing tasks in the thesis, I have quoted verbatim with no changes to spelling, punctuation, capitalisation or any other grammatical

feature. The excerpts of the writing tasks are italicised and bracketed within quotation marks. In terms of the interviews, I have transcribed them verbatim but added interpretive information such as pauses and emphases. Pauses are shown with brackets and words that the speaker emphasised are underlined. The excerpts of the interview transcripts used in the thesis are italicised and bracketed within quotation marks.

3.3 Participants

The participants in the study were 76 students at an Australian university who were enrolled in Certificate IV in Health Science Foundations (HSF) in 2009. These students were the authors of the writing tasks analysed for the second stage of the study and eight of them were also the interviewees for stage 3 of the study. For purposes of describing the study participants, I accessed the university's paper based records of the students' 2009 HSF applications. The application process involved each student completing a hard copy application form and a personal statement as to why she was applying to enrol in the course and any educational or social disadvantages that she had faced relevant to her application. The paper based records also included a hand-written writing task completed by applicants when they attended a selection interview at the university. A de-identified sample writing task is included in Appendix G.

The application forms were analysed to identify the demographic characteristics of the study participants including their education and learning pathways prior to their HSF application. These data were supplemented by analysis of the 2009 personal statements appended to the application forms. These statements provided insights into the students' aspirations and life circumstances at the point at which they enrolled in HSF, thus further situating the study in the context of the students' lives and circumstances. This was consistent with the constructivist conception of knowledge that informs this study.

The participants in the study are now described below in terms of their demographic characteristics (section 3.3.1), the demographics of the interviewees in comparison with the cohort as a whole (section 3.3.2), and the demographics of the cohort as a whole, in comparison to participants in three earlier landmark American studies and one important Australian study of personal epistemology (section 3.3.3).

3.3.1 Demographic characteristics

Data sought from the university's 2009 administrative records included each student's gender, date of birth, language other than English (LOTE) spoken at home, enrolment in a course in English as a Second Language (ESL), and prior level of education. Data were extracted for 84 students who were enrolled in the course in 2009. Six students were excluded from the study, however, because there was no writing task in their files. Two older men of ESL background whose writing tasks were available were also excluded from the study because limitations to their written English expression prevented me from inferring their epistemological assumptions from their writing tasks. As a result, 76 students were the basis of the thesis.

The demographic characteristics of the 76 students are reported in detail in Table 3.1 and can be summarised as follows. There were 68 women and eight men. Fifty five of the students were from an ESL background – defined as speaking a Language other than English (LOTE) at home or enrolled in a course in English as a Second Language (ESL) concurrently with HSF. None of the students had met the requirements for entry to the Bachelor of Nursing on the basis of their secondary schooling but 46 had completed secondary education in Australia. Just over half of the students were aged 19–21 in 2009 and the remainder were aged 22 years or older.

Table 3-1: Demographic characteristics of 76 HSF students in 2009

Participant characteristics	Number of students	Percentage of students
Female	68	89%
Male	8	11%
ESL background*	55	72%
Met entry requirements for Bachelor of Nursing on basis of secondary education	NIL	NIL
Completed secondary education (Year 12) in Australia but did not gain entry to Bachelor of Nursing	46	61%
Did not complete secondary education (Year 12) in Australia	30	39%
Aged under 19 years on 1 January 2009	NIL	NIL
Aged 19 – 21 years on 1 January 2009	39	51%
22 years of age or older on 1 January 2009**	37	49%

Notes to table:

*Number ESL students by region: African (22), Asian (15), European (10), Middle Eastern (6), unknown (2)

** Of 37 students older than 21 in 2009, 23 were aged 22-29 years and 14 were aged 30+ years.

3.3.2 Interview recruitment

The initial step in recruiting people for the interviews was to construct a purposive sample that sought to ensure that interviewees were representative of the demographics of the cohort and the six epistemological lenses (patterns of assumptions about knowledge and knowing) that had been inferred from the writing tasks using the conceptual framework. To construct the purposive sample, students in each epistemological lens were categorised in three ways - by age (born before 1988 or in or after 1988), by ESL or English speaking background (ESB), and by schooling (completed Year 12 or did not complete Year 12 in Australia). I then assigned each student a number and recorded the students in a table according to their epistemological lenses, and age, language background and school completion (see Appendix H). The intention was to recruit 13 interviewees: two participants per epistemological lens and one extra for experiential knowing which had the largest number of writing tasks associated with it. Despite using this process to determine the way in which I selected former students to be invited for interviews, the eight interviewees were not wholly representative of the demographic characteristics or the epistemological lenses of the cohort. This is because some people could not be contacted and some people declined the invitation to participate. The interviewees, however, were drawn from each of the four groups described in section 3.3.4.

The demographic characteristics of the interviewees are reported in Table 3.2 and their epistemological lenses are reported in Table 3.3.

Table 3-2: Number and percentage of interviewees by demographic characteristics

Demographic Characteristics	No. of students in cohort	Percentage of cohort	No of interviewees	Percentage Interviewees
Aged 22 or older on 1 January 2009	37	49%	1	12%
Aged 19–21 years on 1 January 2009	39	51%	7	88%
ESL background	55	72%	7	88%
ESB	21	28%	1	12%
Completed secondary education (Year 12) in Australia	46	61%	7	88%
Did not complete secondary education (Year 12) in Australia	30	39%	1	12%

It can be seen from Table 3.2 that whereas 51% of the cohort were aged 19–21 years at commencement of HSF, seven out of eight interviewees (88%) were in this age

range. Likewise, whereas 72% of the cohort was of English as a Second Language (ESL) background, 88% of interviewees were ESL background. Finally, whereas 61% of the cohort had completed secondary education (Year 12) in Australia, 88% of interviewees had completed secondary education in Australia. In summary, the interviewees were over representative of young, ESL background students who had completed secondary education in Australia. As to gender, the interviewees were comparable to the whole cohort - seven women (88%) to one man (12%).

Table 3-3: Number and percentage of interviewees by epistemological lens

Epistemological lens	Number of students in cohort	Percentage of cohort	Number of interviewees	Percentage of Interviewees
Champion knowing	14	18.5%	2	25%
Passive knowing	17	22%	1	12.5%
Individualistic knowing	3	4%	0	0
Experiential knowing	18	24%	1	12.5%
Inclusive (tentative) knowing	11	14.5%	1	12.5%
Evaluative knowing	13	17%	3	37.5%
Total	76	100%	8	100%

It can be seen from Table 3.3 that, in summary, the interviewees were over representative of the champion and evaluative knowing lenses, under representative of the passive, individualistic and experiential knowing lenses, and roughly equalled the proportion of inclusive knowers. Specifically, whereas 18.5% and 17% of the cohort were champion and evaluative knowers respectively, two out of eight interviewees (25%) were champion knowers and three interviewees (37.5%) were evaluative knowers. By contrast, whereas 22% and 24% of the cohort were passive and experiential knowers, only one interviewee (12.5%) was drawn from each of these lenses. Finally, whereas 14.5% of the cohort was inclusive (tentative) knowers, one interviewee (12.5%) was drawn from this lens. There were no interviewees classified as individualistic knowers. Details of the process for inviting people to participate in the study are included as Appendix H.

3.3.3 Comparison with earlier studies

The demographics of the HSF cohort will now be described in comparison to cohorts in three landmark American studies and one important Australian study of personal

epistemology. The purpose of the exercise is to demonstrate significant demographic differences between the HSF study and the studies by Perry (1970) and Baxter Magolda (1992, 2004) and significant demographic similarities with the studies by Belenky et al. (1986) and Brownlee, Berthelsen and Boulton-Lewis (2010). This detailed comparison is intended to provide an informed basis for the discussion in Chapter 6 about the relationship between personal epistemology and demographic characteristics including participation in university education.

Table 3-4: Demographic characteristics of 76 HSF students compared to other studies

Characteristic	Percentage of participants x characteristic				
	Current study	Perry	Baxter Magolda	Belenky et al	Brownlee et al.
Met entry requirements for a Bachelor degree on basis of secondary schooling	Nil*	100%	100%	50% ^^	Nil reported
Under 22 years of age at commencement of study	51%	100%	100%	Unknown	81%#
Completed secondary education	61%^	100%	100%	50% ^^	68%
English as a Second Language (ESL) Background	72%	Nil reported	Nil reported	Nil reported	Nil reported
Female	89%	<1%**	50%	100%	91%
Male	11%	>99%**	50%	Nil	9%

Notes to table:

*None met entry requirements for Bachelor of Nursing, but 6 students had previously gained university entrance - 3 had completed non-Nursing degrees (2 overseas) and 3 had incomplete Bachelor studies.

Brownlee et al. (2010) reported age in terms of younger or older than 25 and included students aged 15–19.

^Completed secondary education in Australia.

^^Estimate based on the fact that 33% of participants were recruited from parenting classes and some others from high school settings (Belenky et al. 1986, p. 12).

**Women were 20% of Perry's (1970) interviewees but, with a few exceptions, the illustrations and validation in the study drew on reports of men (1970, p. 16).

To begin, the demographic characteristics of the HSF students as summarised in table 3.4 are a contrast with the characteristics of participants in studies conducted by Perry (1970) and Baxter Magolda (1992, 2004) - see Chapter 2 for details. Perry's

pioneering study, for instance, was conducted among students at Harvard University, and Baxter Magolda's longitudinal study participants were, for the first four years of the study, enrolled in a selective college. In other words, a feature of the studies by Perry and Baxter Magolda was that they reported exclusively on the personal epistemology of American students who had successfully met the academic requirements for university enrolment and subsequently participated in a rigorous liberal arts education. Clearly, the HSF students were very different especially in that none of them had met the educational criteria for enrolment in the Bachelor of Nursing at commencement of the study and over one third had not completed secondary education in Australia. Moreover, about 90% of the HSF participants were women compared to 50% of Baxter Magolda's participants and a small percentage of Perry's participants. Two thirds of the HSF students were from an ESL background and none of Perry or Baxter Magolda's participants were described in these terms. Finally, half of the HSF students were older than the participants in the other two studies.

Turning to a comparison with the participants in the studies by Belenky et al. (1986) and Brownlee et al. (2010), it can be seen that they are more similar to the HSF participants - see Chapter 2 for details. That is, all of Belenky et al.'s participants were women and on my estimation only about half of them had gained access to a Bachelor degree or completed secondary education. Like participants in studies by Perry (1970) and Baxter Magolda (1992, 2004), however, Belenky et al.'s participants were mostly white Americans. The percentage of participants aged under 22 years is not reported. The participants in Brownlee et al.'s study were similar to the participants in the current study in that: about 90% were women; they were of a wide range of ages; none were reported as having met the entry requirements for a Bachelor degree on the basis of their secondary schooling; and nearly one third had not completed secondary education. The main difference to the HSF cohort appears to be the language background of participants. That is, there were no ESL speakers reported by Brownlee et al.

3.3.4 The tertiary preparation course

The tertiary preparation course in which the students were enrolled in 2009 was colloquially known as Gateway to Nursing (GTN) because a course with a similar curriculum had been offered under this name for many years. Consequently, in the interviews some of the interviewees referred to the course as Gateway to Nursing. Officially, however, the six-month course was the Certificate IV in Health Science

Foundations (HSF). It was offered in Semester 1 and Semester 2 in 2009 and in each semester there were two groups of HSF students. Group 1 students in first semester and Group 3 students in second semester were assessed as needing intensive English language development and consequently were concurrently enrolled in HSF and a course in English as a Second Language (ESL). Group 2 students in first semester and Group 4 students in second semester were enrolled only in the HSF course. For clarity I will refer to the first semester groups as Group 1 (ESL) and Group 2, and the second semester groups as Group 3 (ESL) and Group 4.

HSF was a discipline linked tertiary preparation course that included foundational discipline knowledge in Biology, Chemistry and Maths. The course offered individualised and customised learning support that Assunta, one of the interviewees, described as, *'how the teacher teach us. Like, just like if we don't understand, they just [pause] come to us ... they explain it to us.'* In other words, the course focused very strongly on the scaffolded development of numeracy and language and literacy skills which were contextualised for the field of study of the student's destination course (Nursing). Language development activities included written academic English and oral presentations and what are often referred to as 'learning to learn' skills such as critical thinking, research and problem solving. Numeracy development activities included application of basic maths skills to tasks such as calculating medication dosages.

HSF was one of a suite of tertiary preparation courses that the university offered in 2009 (Newell 2010) that included accredited further education courses at a sub Bachelor level such as the Certificate IV in Liberal Arts and the Diploma of Liberal Arts. The university also offered a dual award Diploma of Liberal Arts / Bachelor of Arts that enabled students to commence their studies at a sub Bachelor level and to transition to a Bachelor degree via units of study accredited at both levels. These courses were provided as an alternative entry point into tertiary education.

The dominant pathway into tertiary education in Australia is directly from secondary school based on a student's Australian Tertiary Admission Rank (ATAR) which is derived from their academic assessments in the final year (Year 12) of their secondary schooling. Tertiary preparation courses, on the other hand, provide another pathway into tertiary education and may be described as 'second chance' further education. These accredited courses are intended to address the educational needs of a variety of learners: students with low ATAR scores; mature age people returning to study after a

prolonged period in or out of the workforce; people from a non-English speaking background who could benefit from intensive language development; and people from a low socio-economic background who could benefit from academic support to enhance their success in higher education.

Educational pathways leading from tertiary preparation courses are flexible because the courses include scaffolded language and learning support and generic academic skill development as well as discipline knowledge. HSF students may articulate, for instance into the Bachelor of Nursing or a degree such as Bachelor of Psychology. Alternatively, students may articulate to a course in the Vocational Education and Training (VET) sector e.g. Diploma of Nursing and then apply for the Bachelor of Nursing on the basis of their completion of the Diploma of Nursing. The importance of this flexible and scaffolded pathway was articulated by Assunta who said, '*If I go straightaway from Year 12 to Bachelor of Nursing, I don't think I'll be able to cope ... I think I learn from [pause] the stepping stones that I go through.*' That is, she described her education as a sequence of steps each of which laid the ground work for the next step.

Vocational qualifications, however, may also lead directly to employment which is a further important outcome of HSF. As Emilio, another interviewee, said, about combining employment and study, '*With juggling school and work ... I've considered the fact that it might take me longer to finish ... but at the same time if I was to quit working, I'd probably have times where, like, finances, pretty much [were a problem].*' That is, an educational pathway that encompasses HSF, Diploma of Nursing and Bachelor of Nursing is important not only because it enables acquisition of academic and practical skills but also because it provides access to employment at a number of points along the pathway.

3.4 Research materials and data collection

As discussed in section 3.2, the study involved three stages beginning with the development of the conceptual framework in Chapter 2. The current section describes the research materials and data collection methods for stages 2 and 3 of the study.

3.4.1 Stage 2 - Writing tasks

The second stage of the study involved analysing material drawn from the university's paper based records of each student's 2009 HSF application and selection interview. These records included a hard copy of a hand-written writing task completed by

applicants when they attended a selection interview at the university. The 76 writing tasks used in the study were produced by applicants who were subsequently enrolled in HSF. This section describes the naturalistic texts (writing tasks) used in the study, compares them to written materials used in some earlier studies, and justifies them as appropriate to the current study. The section concludes by discussing the two stage data collection process with reference to earlier studies.

The 76 naturalistic texts (writing tasks) were produced during a 20 minute, supervised period of the HSF course selection interview when applicants were required to write a response to an essay topic. In other words, the writing tasks were not produced with a research purpose in mind. Nevertheless, they were appropriate as a data source for the study because they were produced in a supervised setting which ensured their authenticity as genuinely the work of the writer. Moreover, their production, prior to the writers' participation in university education, distinguished them as a data source from data collected by Perry (1970), Baxter Magolda (1992) and many subsequent researchers who studied cohorts of university students. Consequently, the writing tasks as a data source were consistent with the study's focus on investigating personal epistemology amongst tertiary preparation students. Overall then, their advantages outweigh the fact that they were mostly brief (200-250 words) and the level of written English was sometimes poor. In Appendix G, a de-identified copy of one of the hand-written writing tasks is reproduced. The annotations shown on the writing task were made by the course selector, not by this researcher.

On most occasions, applicants were given the following four essay topics to choose from:

1. Consider some of the major changes that have taken place in the world in recent years. Describe one of these changes. Discuss whether the change has been beneficial.
2. Compare Australia's health care system with the health care system of another country.
3. Describe a positive or negative learning experience. Explain what you think makes effective learning.
4. 'Women should stay at home and look after the children while their husbands go out to work.' Discuss this statement.

On some occasions, however, the fourth question about women's role was replaced with a question on obesity. As a result, there are two writing tasks that address the following question:

- The media and federal government are focusing on obesity as a major health issue in Australia. What are the major causes of obesity and what are some of the possible effects of obesity on the health of individuals?

Students who were unable to complete a writing task on one of the specified topics were invited to write a response to the question, 'How has your day been so far?'

I will now discuss the naturalistic writing tasks in relation to the production task used by Baxter Magolda (1992) in her early research and the interview questions asked by Kuhn (1991) in her investigation of thinking in everyday life. Prior to her longitudinal interview study, Baxter Magolda used a purpose-designed production task to invite more than 1000 students to write short essays about the nature of knowledge and how they learned (1992, p. 6). The essay production task posed questions about the role of the instructor, learner, peers and evaluation in learning (Baxter Magolda 2004, p. 32). By comparison, the writing tasks analysed for the current study were neither purpose-designed for the study nor focused on learning. Rather, only one of the essay topics given to HSF applicants explicitly focused on the participants' educational views. Instead, the HSF writing tasks addressed topics that were mostly concerned with issues beyond the classroom.

In this way the topics were analogous to Kuhn's (1991) interviews that questioned 'people about real, meaningful issues that are familiar to them in their own experience' (1991, p. 10). In other words, the naturalistic texts used in the study share with Kuhn's interview questions a closer relation to the thinking that people engage in outside of psychological laboratories (1991, p. 9) than responses to production tasks designed specifically to explore personal epistemology. The use of naturalistic texts is an important feature of the present study and one that distinguishes it from previous research in the field. Specifically, data is collected through production tasks that were not designed for research purpose and that address issues beyond the classroom. Earlier research that had explored issues of epistemology in the context of socio-cultural issues had done so through interviews, not production tasks.

The writing tasks offered the possibility of inferring the personal epistemology of participants from research materials that provided opportunities for writers to draw on academic knowledge or lived experience to address the topics. By allowing for writers to respond to topics on the basis of lived experience, the writing tasks were consistent with one of the assumptions underpinning the study - that personal epistemology is situated and inter-connected with the knower's life circumstances. This in turn is

consistent with the study's phenomenologically-inspired focus on the life world. Moreover, the writing tasks addressed topics that invited writers to take account of more than one perspective in responding to the topic. In this way, the writing tasks had the potential to chart broad themes relating to the justification of knowing and to the certainty and structure of knowledge posited by my conceptual framework.

Comparing the data collection methods for the current study with data collection methods in studies used by earlier researchers (see sections 2.2.1.1–2.2.1.4), it can be seen that employing a two-phase approach has parallels in the much larger studies by Perry (1970) and Baxter Magolda (1992). In the current study, data were initially collected for the whole cohort through naturalistic writing tasks followed by eight semi-structured interviews. This data collection process allowed for the interviews to explore themes that emerged in the writing tasks. Similarly, Perry administered the Checklist of Educational Views (CLEV) to more than 300 students to explore their preferences for dualistic or more relativistic thinking (1970, p. 7). Subsequently, he interviewed 140 students to explore what appeared to be a developmental pattern in student responses to academic and social diversity (1970, p. 8).

Baxter Magolda invited more than 1000 students to write short essays about the nature of knowledge and how they learned (1992, p. 6). Subsequently, she noted the similarities and differences with the Perry scheme and with the epistemological perspectives identified by Belenky et al.(1986). As a result, she designed a longitudinal study involving interviews with 101 male and female students to explore gender differences in ways of knowing (1992, p. 8). In other words, both Perry and Baxter Magolda used a survey or essay task to chart the patterns in students' ways of knowing before interviewing a smaller number of students.

Belenky et al's. (1986) research, by comparison, was based on extensive interviews with 135 women without recourse to a preliminary survey or essay production task to map the epistemological terrain. Brownlee et al.(2010, p. 106) did not conduct a preliminary survey or essay production task; instead they drew on categories that had emerged in the personal epistemology literature over the previous 30 years.

3.4.2 Stage 3 - Semi-structured interviews

This section will provide a rationale for the use of interviews in the study, describe the interviews conducted for the study, and discuss how the interview schedule was designed to achieve multiple objectives. The section will also describe the 2014 writing

task that was undertaken during the interview and the reflection on the 2009 writing task.

In 2014, in the third stage of the study, eight interviews were conducted with former HSF students. The use of interviews was appropriate for the study because interviews have proved effective in revealing epistemological assumptions in earlier research in the holistic tradition of personal epistemology (Baxter Magolda 1992; Belenky et al. 1986; Brownlee 2003; Perry 1970). Moreover, the interviews further contributed to building up a picture of the participants' complex lives. As such, the use of interviews is consistent with one of the assumptions underpinning the study – that personal epistemology is situated and intimately connected to the knower's life circumstances. The interviews, for instance, provided glimpses of how the participants maintained or changed their assumptions about knowledge and knowing in the light of lived experience.

The first step in the conduct of the interviews was to recruit participants. To do this, contact details for former HSF students were derived from their 2009 course enrolment forms. Then the process outlined in section 3.3.2 was used to establish the order in which former students were contacted. The first attempt to contact each student was via her home email. The second attempt was via her mobile phone number. If neither of these methods were successful further attempts were made to contact her via a letter to her home address or a phone call to her home landline.

Irrespective of how the interviewee was initially contacted, a follow up email was sent to each participant that included: a description of the project; a consent form; advice that they would receive a \$20 gift voucher to offset any expenses incurred in attending the interview; and advice that they would be asked to write a short essay during the interview. Those who attended the interview were advised at the outset that later in the interview they would be asked if they would like to read the writing task they completed during their 2009 HSF selection interview. The intention here was to ascertain whether, in 2014, interviewees would answer the question the same way as in 2009. The interviews were held in locations, and at times, that were chosen by the interviewee and familiar or convenient to them. Five (Emilio, Rosa, Liz, Faith and Assunta) chose to be interviewed in an interview room in the university library; two chose to be interviewed in cafés: Meshell at the university, Pavathi at work; Hurriyet chose to be interviewed at home. Pavathi's choice of the café at the hospital where she then worked was made because she could place her youngest child into the

hospital child care centre during the interview. Similarly, the interview times were chosen by the interviewees to coincide with their days off work or study (Liz, Faith and Hurriyet) or at the end of their shifts or lectures (Emilio, Rosa, Meshell and Assunta) or, in the case of Pavathi, prior to commencement of her shift.

During the one-hour interview, participants were invited to engage in three activities – a 10 minute writing task, a 30 to 40 minute interview, and the interviewee's reflection on their 2009 writing task. The interviews were audio-recorded then transcribed using the interviewee's pseudonym and returned to the interviewee for comment or amendment. No alterations or amendments were suggested by the interviewees.

The interview schedule (see Appendix I) was designed to: reflect the study's conceptual framework and the assumptions of the interpretive paradigm outlined in section 3.1; to facilitate comparison with earlier research; and to explore themes that had emerged from the analysis of the writing tasks. I will address each of these design features in the following discussion.

As outlined in section 3.1, the study drew on phenomenology in the sense of trying to understand 'social phenomena from the actors' own perspectives and describing the world as experienced by the subjects' (Kvale & Brinkmann 2009, p. 26). In this vein, the phenomenologically inspired semi-structured interviews included open ended questions such as Question 3: 'Thinking about the last few years, what is the main thing that stands out for you?' The question was designed to give the student maximum opportunity to choose what experience or reflection to speak about. This was intended to minimize the constraints on students' discourse that my prior reading of their writing tasks inevitably introduced into the conversation. Question 3 was also analogous to questions posed by Belenky et al. (1986) and Perry (1970). In other words, consistent with earlier studies and with a phenomenologically inspired perspective, it was hoped that the insights into personal epistemology that emerged from the interviews would first and foremost be informed by the interviews rather than by my presuppositions.

Additionally, interview questions were designed to explore interviewee's assumptions about knowledge and knowing in the light of the concept of signposts to personal epistemology outlined in my conceptual framework in Chapter 2. There were questions, for instance, that explored the interviewee's assumptions about the source of knowledge, the justification of knowing and the certainty of knowledge. By

incorporating targeted questions oriented to my conceptual framework, the interview schedule was intended to assist in going beyond conveying the participant's understanding of knowledge and knowing to clarification of their assumptions from the perspective of theory.

The interview schedule also included targeted questions that were sensitive to the themes that had arisen in the writing tasks but referenced interviews by earlier researchers in the field of personal epistemology. For instance, Question 8.2 asked, 'In general, do you rely more on (depend more on) expert opinion, personal experience or something else when you really want to know something?'. This question introduced the possibility of the interviewee relying on personal experience, along with expert opinion as a source of knowledge because the writing tasks had illustrated that personal experience was an important source of knowledge and agency for some HSF students. The question, however, was also an expansion of earlier questions by Brownlee (2003) and Belenky et al. (1986). Brownlee's interview question, for instance, asked, 'In learning about something that you really want to know, what is the role of an expert?' (2003, p. 97). That is, the design of the interview schedule was multi-layered and laid the groundwork for the later interpretation of the interviews from successive perspectives in keeping with a hermeneutic approach.

There was no question specifically exploring the structure of knowledge because my initial analysis of the writing tasks had not revealed the structure of knowledge to be as strong a theme as the source and certainty of knowledge and the justification of knowing.

After being asked four introductory questions, the interviewee was asked to do a 10 minute writing task. The 2014 writing task (see Appendix J) comprised four of the topics that were given to HSF applicants in the 2009 selection interview, but interviewees were given 10 minutes to respond to the writing task instead of the 20 minutes allowed in the 2009 selection interview. All of the interviewees agreed to undertake the writing task and two of them (Assunta, Rosa) asked for an extension to the 10 minute writing period. None of the interviewees queried my request or seemed discomfited by the task. Following the writing task, interviewees were also asked if they wanted to say anything more on the topic of their short essay.

The intention with the 2014 writing task was to obtain a sample of writing that was comparable to the 2009 sample and that could be analysed using my conceptual

framework. In this way, the study provided a mechanism for comparing the epistemological assumptions that were inferred from the 2009 writing task with those inferred from the 2014 writing task. These insights could in turn be compared with the assumptions inferred from the interview thereby providing triangulation of the efficacy of using the writing tasks to infer epistemological assumptions.

The last activity conducted during the interview was an invitation to the interviewee to read and reflect on a copy of her 2009 writing task. After the interviewee had read the interview she was asked an open-ended question, 'what stands out for you?' followed by a more explicit question, 'Would you answer this question the same way today?'. In this way, I strove to continue the exploratory questioning with which the interview began whilst incorporating questions that were more targeted to the focus of the research. The question evoked a more emotional response than previous questions. Emilio kept repeating that he could not believe his 2009 writing task had been kept, Assunta wept at the evidence of how far she had come in the five years since she enrolled in HSF, Liz marvelled at the fact that she chose the same topic to write on in 2014 as she had chosen in 2009, and Faith was impressed at her earlier writing task.

3.5 Data analysis and interpretation

3.5.1 Overview

The possibility of a flexible interpretive method lies in the hermeneutical canons of interpretation themselves. The canons of interpretation, originally developed by Radnitzky for the interpretation of literary texts, have been adapted by Kvale and Brinkmann (2009, p. 210). The elements of the canons of interpretation as I understood and applied them to the analysis of the writing tasks and the interviews were as follows:

- Starting with an often vague and intuitive understanding of the text as a whole, I interpreted its different parts.
- The part-interpretations were then tested against the global meaning of the text and sometimes also against other texts by the same participant.
- During this process I also drew on knowledge about the theme of personal epistemology in order to explicate the text.
- I was also aware that an interpretation of a text is not without pre-suppositions. That is, certain formulations of a question to a text already determine which forms of answers are possible.

- Finally, my interpretation of the texts went beyond the immediately given meaning to include its meaning from the point of view of personal epistemology.

I used my understanding of the hermeneutical canons to provide a framework to guide data analysis and interpretation of the different types of texts that were included in the study.

Whilst hermeneutics provided the overarching framework for the study, specific research techniques such as coding and categorisation assisted in the analysis of the data. Coding provided a means for recording and organising selections of text for later comparison and analysis. Categorisation was a means for drawing together identified text selections in the form of patterns and relationships. Kvale and Brinkmann describe the difference between these two activities in the following terms, 'Coding involves attaching one or more keywords to a text segment in order to permit later identification of a statement, whereas categorization entails a more systematic conceptualization of a statement, opening it for quantification' (2009, pp. 201-2). Both techniques are widely used in qualitative research.

Importantly, coding can be either inductive or deductive and in the current study both concept driven and data driven codes are used. Discussing concept driven codes, Miles and Huberman (1994) suggest starting with a provisional list of codes that comes from the conceptual framework or research questions. They also recognise more inductive coding techniques in which data driven codes are generated directly from research materials. This approach includes reading texts from contrasting groups in order to be sensitised to what is different about phenomena (1994, p. 58). They also suggest that phrases that are used repeatedly by informants ("in vivo" codes) often point to regularities in the setting (1994, p. 59). In short, as Charmaz says, 'Your codes show how you select, separate, and sort data to begin an analytic accounting of them' (2014, p. 111). That is, coding is the start of a process that builds up a picture of the phenomena being studied by comparing data instances for similarities and differences, then develops categories of codes and relates the codes derived from the research materials to theoretical concepts. In the process codes are refined, abandoned or expanded. Sections 3.5.2 and 3.5.3 describe the application of these analytic processes to the writing tasks and the interviews.

The unit of analysis in the study varies from the individual to the cohort. The unit of analysis for the writing tasks, for instance, is the individual but the analyses of the individual writing tasks served to inform the description of six categories at the level of

the cohort. In the interviews, the unit of analysis was the individual interviewee but in section 5.6.2, the unit of analysis shifts back to the cohort when insights from the interviews are used to revise the six epistemological lenses that emerged from the writing tasks.

3.5.2 Writing tasks

The analysis of the writing tasks was undertaken in order to infer the student's epistemological assumptions when they enrolled in HSF. This provided a comprehensive mapping of the epistemological assumptions of the cohort and a basis for comparison with later data collected through interviews with eight students.

Section 3.5.2 will be in three parts. The first of these is an account of the coding process by which segments of text in the writing tasks were identified as significant on the basis of inductive and deductive processes and then coded for future reference. The second sub-section is an account of the classification process that involved segments of text being coded as illustrative of epistemological assumptions and then correlated with other segments of text to reveal patterns of epistemological assumptions that I term epistemological lenses. Section 3.5.2.3 ends with an account of two different ways in which the analysis of the writing tasks was written up in Chapter 4.

In this section the term 'epistemological position' or 'perspective' is used to describe the epistemological categories used by earlier researchers. The term 'epistemological lens' is used to describe the epistemological categories that emerged in the study – see Table 3.3.

3.5.2.1 Coding of the writing tasks

The method that I adopted for coding the writing tasks was partly inductive (data driven) and partly deductive (theory driven). Both processes were used in the analysis of the 21 writing tasks for Group 1 (ESL) and the 17 writing tasks for Group 2 in Semester 1 (see section 3.3.4 for the four HSF groups in 2009). Once I had completed the process of inductively and deductively coding the Semester 1 writing tasks, I then read the Group 3 (ESL) writing tasks and the Group 4 writing tasks from Semester 2. This involved applying the codes derived from the first semester writing tasks to the 40 second semester writing tasks. During this process, the original set of codes was further developed and refined but by the time I read the Group 4 writing tasks the set of codes was largely finalised.

The inductive strategy that I used was to ask myself as I read the writing tasks which features of the text might point towards the writer's implicit assumptions about knowledge and knowing but starting with a 'vague and intuitive understanding of the text as a whole' (Kvale & Brinkmann 2009, p. 210). In other words, as a researcher, I started with knowledge about the theme (Kvale 1996, p. 49) of personal epistemology but I tried to be open to many possible forms in which assumptions about knowledge and knowing may appear in the writing tasks. For instance, my initial list of codes included what type of information was used to support an argument e.g. personal experience, the nature of arguments e.g. concrete or abstract, indicators of epistemological assumptions e.g. recognition of paradox and text features such as pronoun usage.

In practice, my awareness of the significance of a text feature sometimes only became apparent after I had read a writing task that differed from earlier writing tasks. For instance, the use of the third person did not attract my attention until I read a writing task couched in the first person plural. After that, I coded a variety of uses of pronouns as shown in Appendix F. I then reviewed writing tasks that I had read earlier to apply the new codes if appropriate. At that point, I did not have a firm view as to whether the use of pronouns in the writing tasks would be a significant indicator of personal epistemology but I was open to the possibility that it could pertain to the writer's assumptions about knowledge or knowing and so I coded the passages for future reference.

Using the twin processes of looking for passages in the writing tasks that may indicate an assumption about knowledge and knowing and noting differences between writing tasks, I developed pairs of codes or groups of codes (see Appendix F) in relation to issues such as whether the writing tasks were illustrated by impersonal information or lived experience or by concrete or abstract examples. I also developed codes in relation to processes and methods of argumentation.

The deductive strategy that I used to develop codes whilst reading the writing tasks was an expression of my more detailed 'knowledge about the theme' (Kvale & Brinkmann 2009, p. 210) of personal epistemology. Specifically, I applied the concept of signposts to personal epistemology to identify features of the writing tasks that could be coded as demonstrating an implicit assumption about knowledge and knowing that illustrated the source, justification, certainty or structure of knowledge. One such code that I developed in relation to the source of knowledge was, 'Writing task includes

reference to an authority.’ An example of a section of text that I coded in this way was: *‘I would say that Australia has a better health care system not just saying it but was actually taught by a year 12 Health and Human development teacher.’* I interpreted this passage as suggesting that the writer assumed that the source of knowledge lay outside himself.

Once I had completed the process of inductively and deductively coding the Semester 1 writing tasks, the set of codes was applied to the analysis of the writing tasks of the 16 students in Group 3 (ESL) and the 24 students in Group 4 in second semester. In the process, some further modification of codes occurred. See Appendix F for the full list of codes.

I then created a spread sheet with a column for each of the codes that I had derived from the writing tasks. In the spread sheet, I created a record for each student with a column for each of the codes. I then noted which codes applied to the writing of that student and I entered segments of the text that related to the relevant codes.

3.5.2.2 Classification of students by codes and categories

The next step was another iteration of the process by which ‘the meaning of the separate parts is determined by the global meaning of the text, as it is anticipated’ (Kvale 1996, p. 47). That is, I sorted the spreadsheet by codes to see what patterns of implicit assumptions were to be found in the writing tasks of individual students. I then compared each student’s epistemological assumptions with an epistemological position / perspective drawn from theory, that is, I was not ‘presuppositionless’ (Kvale & Brinkmann 2009, p. 211).

Initially, it seemed that the patterns were similar to the patterns that Perry (1970) and Belenky et al. (1986) had described in their research. Accordingly, I gave each student a preliminary classification of epistemological position or perspective based on a category derived from Perry and Belenky et al. Then, ‘using my knowledge of the theme’ (Kvale & Brinkmann 2009, p. 210) I applied my conceptual framework, described in section 2.4, to investigate in detail whether the distribution of codes within each writing task conformed to the clusters of assumptions captured in the epistemological categories of Perry and Belenky et al. The differences that I identified between the theoretical categories and the actual patterns of assumptions became the basis for my revision of the epistemological categories (lenses) drawn from the data.

That is, adapting a process described by Kvale and Brinkmann (2009, p. 204) I observed patterns of codes in the writing tasks and assigned a name to the six patterns (lenses) which I could discern. Sometimes due to the brevity of the writing tasks not all signposts to personal epistemology were demonstrated in each writing task. Two writing tasks were not assigned to a lens because there was insufficient evidence to assign a classification to the writing task. The number of students whose writing tasks conformed to each pattern of codes was then counted and recorded. The lenses and the number of writing tasks assigned to each lens was as follows: champion knowing (14); passive knowing (17); individualistic knowing (3); experiential knowing (18); tentative knowing (11); and evaluative knowing (13).

The categorisation of the implicit assumptions about knowledge and knowing in the writing tasks served several purposes: (a) It provided a structure through which to view the 76 writing tasks and when presented in a table gave an overview of the occurrence of each epistemological lens; (b) It conveyed the finding that there were some patterns in the data that differed from theory; (c) The overview provided by categorisation enables readers to judge how typical the quotes used in the qualitative analysis are for the writing tasks as a whole.

3.5.2.3 Writing up the analysis of the writing tasks

In Chapter 4, the analysis of the writing tasks is written up in two ways. In section 4.1, excerpts from multiple writing tasks are used to illustrate each of the six epistemological lenses. In section 4.2 eight writings tasks are written up in a holistic way.

In writing up section 4.1, I drew on a sample of writing tasks to illustrate each of the lenses rather than quoting from all of them. In order to select which of the writing tasks to use, I considered two criteria. Firstly, in the case of the individualistic lens where there were only three writing tasks assigned to that category, segments of text from all three writing tasks were included in the discussion of the lens. In the case of the other five lenses, I selected four to six writing tasks that illustrated the epistemological assumptions associated with each lens. Table 3.5 summarises the number of students classified as demonstrating each epistemological lens and the number of writing tasks used to illustrate each lens in section 4.1.

Table 3-5: Number of 2009 writing tasks assigned to each lens

Epistemological lens	Number of 2009 writing tasks assigned to lens	Number of 2009 writing tasks used in section 4.1 to illustrate each lens
Champion knowing	14	4
Passive knowing	17	6
Individualistic knowing	3	3
Experiential knowing	18	5
Tentative knowing	11	4
Evaluative knowing	13	5
Total	76	27

In section 4.2, the writing tasks of eight students are presented in full in the form of vignettes. The writing tasks are the work of the eight students who were interviewed in 2014. The vignettes are intended to convey the meaning or argument of each writing task as well as its epistemological assumptions. That is, in section 4.2 the student's epistemological assumptions are revealed in context. This enables the reader to discern the argument that was being put forward as well as the epistemological assumptions that I was inferring from the writing task. From a hermeneutic perspective, this is expanding the meaning of the text but in a way that is consistent with the original. This dual purpose is achieved by interpolating into the texts the codes derived from the earlier reading of the writing tasks. In this way, the interpreted writing tasks also served to introduce the eight students who were interviewed in 2014 and provided a glimpse of their meaning making five years earlier.

3.5.3 Interviews

The analysis of the interviews was undertaken in order to infer from them the students' epistemological assumptions in 2014 and their recollections of significant experiences that contributed to their epistemological development. This provided a basis for refining the epistemological lenses described on the basis of the writing tasks and for understanding the individual interviewees and their meaning making.

3.5.3.1 Overview

Hermeneutics not only contributed to my interpretation of the writing tasks but also contributed to my understanding of the interviews. From a hermeneutic perspective, the dialogue producing the interview text is reflective of the fact that the interviewer and interviewee are co-constructors of knowledge (Kvale & Brinkmann 2009, p. 18). The way that this process played out in the interviews was that the open-ended questions provided opportunities for the interviewees to introduce topics and experiences into the

interview that they felt were relevant and important. As a result, the knowledge that emerged from the interview reflected not only my interests and assumptions as a researcher but the rich life experiences of the interviewees. That is, the knowledge that emerged is situated and co-constructed.

My understanding of the interviews was also framed by the context in which I listened to them. Unlike my first reading of the writing tasks that began with a 'vague and intuitive understanding of the text as a whole' (Kvale & Brinkmann 2009, p. 210), I listened to the audio-tapes of the interviews and read the transcripts from a more focused view point, anticipating that they may be consistent with the findings of the second stage of the study (Chapter 4). In these findings, I had suggested six epistemological lenses informed by the developmental tradition of personal epistemology (Belenky et al. 1986; Perry 1970).

Moreover, on the basis of the writing tasks, I interpreted these epistemological lenses as representing three broad assumptions about the source of knowledge: the source of knowledge is primarily outside the self; the source of knowledge is primarily lived experience; and the source of knowledge is primarily outside the self but multiple. In my reading of the interviews, therefore, I anticipated a series of holistic epistemological lenses that were defined in the first instance by the knower's conception of the source of knowledge and subsequently by their response to the challenge of justifying knowledge and determining its certainty and structure. That is, I applied the qualitative research techniques of coding and categorising but drew together excerpts of the interview transcripts in the form of patterns and relationships informed by my earlier reading of the writing tasks and by the conceptual framework.

3.5.3.2 Analysis and interpretation of the interviews

When I coded the interviews, therefore, I looked for material related to the signposts to epistemology in a particular order. First, I coded material related to the source of knowledge, then the justification of knowing, followed by material related to the certainty and structure of knowledge. That is, I began a close reading of the transcripts of the interviews focussing on stories, metaphors and language that might relate to the source of knowledge.

The interview with Emilio provided a particularly explicit statement about the source of knowledge when he said, '*my internal belief is that not everything happens for a reason. But my external belief says that God is in control of everything.*' In the context

of the interview it was apparent that the internal point of view was his personal point of view and that the external point of view was a traditional view of the omnipotence of God. That is, an interpretation of the elements of the interview informed my understanding of the global meaning (Kvale 1996, pp. 47-8). In this case, the global meaning was Emilio's narrative of how his assumptions about the source of knowledge were in a state of flux and now incorporated internal and external sources of knowledge.

Moreover, my knowledge about the theme of personal epistemology assisted me in being sensitive to the nuances of meanings expressed (Kvale 1996, p. 49). That is, through my intensive immersion in the writing tasks and the interviews my attention was drawn to specific responses, phrases, images and metaphors used by interviewees that were either consistent, inconsistent, or an expansion of my presuppositions regarding anticipated signposts to personal epistemology. Pavathi, for instance, expanded my understanding of the role of lived experience as a source of knowledge when she said, "*It's my personality ... if you want something to achieve [for] yourself ... go ahead, that's what I believe.*" That is, she demonstrated that she not only drew on her lived experience of the world but also on her lived experience of herself. In this way she illustrated how my concept of lived experience as a source of knowledge needed expanding to include self-knowledge.

The iterative process between the whole and the parts resulted in a continuously deepened understanding of meaning. During this process I tested my understanding by a 'comparison between interpretations of the single statements and the global meaning of the interview' (Kvale 1996, p. 48). An example of this process was my attempt to understand the discrepancy between two explanations that Rosa gave for her change of views about women and employment. Firstly, she attributed her change in views to her experience of teaching children in Sunday school where she observed that children benefited from their mother's not being in the workforce. Later she ascribed her change of views to the fact that '*there was a Bible worker in my church and he explained it to me in such a way it just made sense.*' One way of accounting for the two divergent descriptions of Rosa's change of heart is to regard it as an example of the merging of Rosa's sense of internal knowledge derived from lived experience with the external knowledge that she derived from religious authorities with whom she identified. In other words, the apparent discrepancy between Rosa's statements was resolved in the context of my understanding of the epistemological assumptions that informed the interview as a whole.

The process of analysis and interpretation of the interviews also included consideration of the implications of the interviews for the epistemological lenses identified in Chapter 4. That is, the coding of the interview transcripts enabled me to explore to what extent the coded material was consistent, inconsistent or an expansion of the epistemological lenses described in Chapter 4. This led to the enhancement of my understanding of the six lenses: the identification of some factors that contributed to changes in the assumptions that individuals held about knowledge and knowing and to the revision of the description of inclusive (tentative) knowing. In other words, the analysis and interpretation of the interviews in stage 3 contributed to the scholarly understanding of the personal epistemology of tertiary preparation students by providing rich data that could be integrated with the data drawn from the writing tasks to refine the description of the six epistemological lenses.

3.5.3.3 Writing up the interviews

In Chapter 5 the interviews are written up in two ways. Firstly, the interpretation of each interview is presented in extensive segments related to each of the signposts to personal epistemology. This mode of presentation illustrates how theory may be used to extend the insights into personal epistemology provided by in-depth interview data. It also enables the narrative structure of the interviews to be emphasised in order to convey the meanings that the interviewees ascribed to their experiences. In other words, sections 5.1 to 5.5 present the interviews in a format that is analogous to the format of the presentation of the writing tasks in section 4.2. In both cases, the mode of presentation conveys the author / interviewee's intended meaning as well as the relationship of the writing tasks and interview transcripts to the study's conceptual framework. Accordingly, the presentation of the interviews contributes to understanding the interviewees as individuals as well as exemplars of particular epistemological lenses. Section 5.6, on the other hand, considers the implications of the interviews for confirming or revising the description of five of the epistemological lenses that were derived from the writing tasks and presented in Chapter 4.

3.6 Trustworthiness

Although there is no agreement among interpretive researchers about criteria for determining what constitutes good qualitative research, Miles and Huberman (1994, pp. 277-8) explore some practical standards that can help judge the quality of research conclusions. These are *confirmability*, *dependability*, *credibility*, *transferability* and

application. I will discuss what Miles and Huberman mean by these terms and how I have addressed the issues in the study.

Confirmability refers to reasonable freedom from unacknowledged researcher bias (p. 278). To address this issue I have explicitly described the study's methods and procedures in Chapter 3, including the data collection and analysis procedures that have led to the display of conclusions in figures and tables throughout the thesis.

Dependability involves ensuring that the study's processes are consistent and reasonably stable (p. 278). To address this issue, the research questions guiding the study are clearly articulated in the thesis; the study design is congruent with them; and the basic paradigm and analytic constructs are clearly specified in the conceptual framework and its diagrammatic representation (section 2.4).

Credibility involves asking whether the study's findings make sense in terms of the descriptions, interpretations and theory that emerges from the study (p. 278). To address this issue, I provided context-rich and meaningful descriptions of the epistemological assumptions underpinning the epistemological lenses posited in the study; I triangulated the findings from the interpretations of the two writing tasks with verbal responses from the participants and I systematically related the concepts used in the study through a single conceptual framework described in section 2.4.

Transferability is related to the question of whether the study's findings have wider import (p. 279). To enable a reader to make a judgment on this issue, I have provided a detailed description of participant characteristics and context in section 3.3. My explicit description of the conceptual framework was also intended to facilitate its use by other researchers.

Application: In the context of the current study, this standard considers whether the study has pragmatic validity in the sense of being potentially relevant to enhancing education (p. 280). The study addresses this issue in section 6.6.2.

3.7 Ethical principles and procedures for study

3.7.1 Ethics in relation to participants

The National Statement on Ethical Conduct in Human Research (2007) identifies four key principles and considerations that should inform research involving people. The guidelines also identify a number of vulnerable groups, for instance, people in

dependent or unequal relationships (2007, p. 59) who require heightened care on the part of the researcher to identify and prevent risks of harm. In the case of the current study, the participants did not conform to any of the specific groups identified by the guidelines as vulnerable (2007, pp. 51-76). Nevertheless, based on the information that participants provided on their HSF enrolment forms, they were members of potentially vulnerable groups (see section 3.3.1) such as recently arrived immigrants, refugees or ESL or LOTE speakers. Many had low levels of prior education often due to incomplete secondary schooling or fragile physical or mental health. None, however, identified as Aboriginal or Torres Strait Islander. Consequently, during the research the principles of ethical conduct were considered specifically in relation to the needs of the HSF cohort.

Consistent with the National Statement on Ethical Conduct in Human Research (2007), the following ethical principles and considerations underpinned the current research: integrity, justice, beneficence and respect for persons. The research was also conducted in accordance with the university's institutional policies and practices (Victoria University 2012). An application to conduct the research was approved by the university's Human Research Ethics Committee prior to the research commencing (Appendix B).

3.7.1.1 Integrity

Integrity means 'following recognised principles of research conduct' (National Health and Medical Research Council, Australian Research Council & Australian Vice-Chancellors' Committee 2007, p. 12). These principles were applied throughout the research project. Integrity also means 'conducting research honestly' (2007, p. 12), for instance, reporting information accurately whether reporting the views of participants or the work of earlier researchers. In respect of participants, when I have quoted from their writing tasks or interviews, I have quoted verbatim. As regards earlier researchers, material has been accurately quoted and cited. Integrity also involves 'disseminating and communicating results ... in ways that permit scrutiny and contribute to public knowledge and understanding, (2007, p. 12). In accordance with this principle, Section 3.6 outlines the procedures that have been used to ensure the trustworthiness of the research. The findings of the research will be disseminated through conferences and publications.

3.7.1.2 Justice

Justice means firstly, that ‘the process of recruiting participants is fair’ (National Health and Medical Research Council, Australian Research Council & Australian Vice-Chancellors' Committee 2007, p. 12). In the case of the current research this meant including all the HSF students in the research, not restricting the research to only those individuals who had completed secondary education or excluding students who were concurrently enrolled in ESL and HSF (Groups 1 and 3). In this way, the research provides an alternative perspective on personal epistemology to that provided by earlier research with highly educated white Americans (see section 3.3.3). Similarly, the sampling process that was used to determine the order in which I approached former students for an interview was based on the principle of seeking to interview people from each of the epistemological lenses that I had identified (section 3.3.2). This is in line with the principle that justice requires that research does not render some groups or individuals invisible.

Secondly, justice means distributing the burdens of taking part in research. The National Statement puts it this way, ‘In research that is just ... there is no unfair burden of participation in research on particular groups’ (2007, p. 12). Consistent with justice, I weighed up the benefits and burdens of seeking permission from each student individually regarding use of their writing task. I concluded that it would have imposed an unnecessary burden on them to have to provide such permission individually when the writing tasks were already on file. Instead, I sought permission from the university to use the extant records subject to confidentiality and responsible use of the materials. This permission was granted (Appendix A).

Further, the National Statement also stipulates that justice requires that ‘Research outcomes should be made accessible to research participants in a way that is timely and clear’ (2007, p. 12). Accordingly, at the conclusion of study interviewees will be made aware of the research outcomes.

3.7.1.3 Beneficence

Beneficence means seeking to enhance benefits and minimise harm. These benefits ‘may be to the participants, to the wider community, or to both’ (National Health and Medical Research Council, Australian Research Council & Australian Vice-Chancellors' Committee 2007, p. 13). In the case of the current research, there is a benefit to the wider community of including participants from a diverse, multicultural cohort in the

research because they comprise a large number of participants in tertiary education courses. At the same time, it was important to minimise harm by not identifying individuals. In the case of the ESL participants this outcome was achieved by reporting their language background in terms of broad geographic areas rather than individual countries. These broad areas were Africa, Asia, Europe, Middle East and South East Asia.

In the case of other vulnerable participants who may have had negative experiences associated with their studies it was important to mitigate risks associated with factors such as feelings of low self-esteem, poor academic performance, social isolation, cultural conflict, financial difficulties, bullying, or a traumatic family or personal incident during their studies. Consequently, the research was designed to minimise the risks of harm or discomfort to participants (National Health and Medical Research Council, Australian Research Council & Australian Vice-Chancellors' Committee 2007, p. 13) by implementing the strategies outlined below:

- Participants were advised in advance that the interview would include a short piece of writing. In the introductory remarks to the interview they were also advised that towards the end of the interview they would be asked if they wanted to read their own writing from 2009.
- Participants were provided with the name and contact details of a counsellor whom they could contact if required at no financial cost.
- A comfortable, private room was provided for the interview if it was conducted on campus. Otherwise, the interview was held in a place of the interviewee's choice such as a café.
- Interviews with students were scheduled to ensure that participants did not inadvertently meet up with other interviewees. Interviews were held in a university or public venue to provide a neutral space for interviewer and interviewee. One interviewee, however, chose to be interviewed in her home.

Other harm minimisation strategies designed to enhance safety and minimise the financial cost to participants of the study were:

- To schedule interviews in daylight hours where possible. In the case of two interviews that were held in the late afternoon or early evening, participants were offered taxi vouchers or escorted to their car.
- To provide gift vouchers valued at \$20 to offset any small costs such as transport.

- There was no issue with the dependency of participants because when they were interviewed in 2014, none of them were still enrolled at the university where they had undertaken their HSF studies in 2009.

3.7.1.4 Respect for persons

Respect for persons means that researchers should 'respect the privacy, confidentiality and cultural sensitivities of the participants' (National Health and Medical Research Council, Australian Research Council & Australian Vice-Chancellors' Committee 2007, p. 13). Of special concern were those participants who were potentially vulnerable because of their refugee status and the possibility that critiques of their homeland could make their families vulnerable to persecution if they were identified. Other participants were especially vulnerable due to their social situation or physical or mental health as revealed by the personal statements that some participants included in their 2009 HSF applications (see section 1.2).

Consistent with respect for persons, I asked permission from the university to access student data and managed it confidentially. For instance, paper copies of the students' records were stored in a locked filing cabinet and the electronic files that were generated were stored in password protected files. Likewise, I maintained the participants' confidentiality in the way that their personal data was reported. That is, personal data was de-identified via use of pseudonyms and no dates of birth are included in the thesis. The writing tasks were also de-identified by use of pseudonyms and, if they referred to the writer's country of origin by name, the name was replaced by the phrase, 'country of origin' in square brackets. In the case of the interviews, they were transcribed by me to protect the participants' confidentiality.

Respect for persons means respecting the autonomy of participants. That is, during the research process the researcher should give due scope 'to the capacity of human beings to make their own decisions' (National Health and Medical Research Council, Australian Research Council & Australian Vice-Chancellors' Committee 2007, p. 13). This entailed:

- Providing participants with a clear plain language explanation of the project (Appendix D) that attempted to communicate clearly with participants who were not confident readers of English;
- Seeking the informed, written consent of participants;

- Informing participants that they could withdraw from the research at any time including during or after an interview; and
- Electronic copies of the de-identified transcripts of the interviews were emailed to the interviewees and they were invited to make amendments. No amendments were received.

3.7.2 Identification and management of risks to the researcher

In addition to identifying and mitigating potential risks for participants, I also identified and managed potential risks to myself that were associated with the research. The National Statement defines risk as ‘a potential for harm, discomfort or inconvenience’ (2007, p. 15). The risks identified by the National Statement include physical harms, psychological harms and legal harms (p. 16).

Physical risk: As outlined in the National Statement, physical harms can include, ‘injury, illness or pain’ (2007, p. 16). From my perspective as a researcher, the risk of injury was managed by conducting interviews in public places that met occupational health and safety (OHS) standards during daylight hours where possible. When interviews were held in the late afternoon or early evening I travelled by car to the venue. On one occasion, however, there was an oversight in respect of implementing protocols for the conduct of interviews. That is, one of the interviewees specified that she would like to be interviewed in her home and the interview was held successfully and uneventfully. In hindsight, however, I should have ensured that protocols were in place such as advising my supervisor in advance of the time and place of the interview and of its successful conclusion.

Psychological risk: As outlined in the National Statement, ‘a range of relationships between participants and researchers may develop as a result of the duration and nature of the interaction’ (2007, p. 27) and where necessary researchers must consider whether to modify those relationships. In the case of the current research, where issues of the participants’ future study or career plans may have been raised by the interviewee, I did not pursue the topic or offer advice despite extensive experience in course and career pathway planning.

Legal risks: A potential legal risk to researchers is that they will infringe intellectual property rights. With regard to the current project it was within the terms of the university’s policy that ‘makes no claim to ownership of intellectual property created by students’ (Victoria University Undated). Exceptions may be where there is ‘funding by

the University or an external sponsor with the object of developing the intellectual property' for purposes of commercialisation. No such agreement is in place for the current research. Rather, the research project was conducted by a sole researcher. There were no partner institutions involved in the research.

3.8 Summing up

This chapter has described the methodology, research design, participants, data collection and analysis of research materials conducted for the study. It has also considered issues of trustworthiness and ethical principles and procedures implemented in the study. This chapter, therefore, has laid the ground work for Chapter 4 which presents the analysis and interpretation of the writing tasks and Chapter 5 which presents the analysis and interpretation of the interviews. Chapter 6 will integrate the findings from the two preceding chapters.

Chapter 4: Findings from Writing Tasks

This chapter has two sections. Section 4.1 utilises my conceptual framework to analyse 76 writing tasks submitted by students who successfully applied to enrol in Certificate IV in Health Science Foundations (HSF) in 2009. Section 4.2 focuses on the 2009 writing tasks of eight students from that cohort who were interviewed for the current study in 2014.

4.1 Application of conceptual framework to writing tasks

As a result of applying the conceptual framework to the 76 HSF writing tasks, I identified six epistemological lenses that could be discerned, each with a distinctive pattern of implicit assumptions about knowledge and knowing and each associated with a distinctive form of the knower's agency. The lenses, and the number of writing tasks assigned to each lens, were as follows:

- champion knowing (14);
- passive knowing (17);
- individualistic knowing (3);
- experiential knowing (18);
- tentative knowing (11); and
- evaluative knowing (13).

Each of these lenses is illustrated in the following discussion by a number of writing tasks.

In the discussion of each epistemological lens, there are three sub-sections beginning with an overview of each lens from the perspective of signposts to personal epistemology. The overview reports the implicit assumptions about the source, certainty and structure of knowledge and the justification of knowing for each lens. Where applicable, variations on each lens are noted. The knower's sense of agency is also described. Next, a more detailed consideration of each epistemological lens is provided in which examples of student writing are used to illustrate the assumptions and codes associated with each signpost to personal epistemology for that lens. The process of identifying and coding assumptions was described in section 3.5.2. The discussion of each lens concludes with a diagram which summarises the assumptions about knowledge and knowing revealed by the signposts to personal epistemology for that lens and the sense of the knower's agency associated with the lens.

Section 4.1 concludes with a discussion of how the conceptual framework as applied to the writing tasks contributes to answering the research questions guiding the current study.

4.1.1 Champion knowing

4.1.1.1 Overview of champion knowing lens

The champion knowing lens, developed on the basis of 14 writing tasks, is characterised by a merging of the knower and the source of knowledge. That is, the knower seems to identify with a collective authority. The corollary of the merging of the knower with the source of knowledge is an 'us' and 'them' quality to the writing of champion knowers in which the writer distances him / herself from 'the other.' Moreover, the assertions of champion knowers are divorced from any explicit reference to a source of evidence for knowledge. In other words, knowledge is taken to be self-evident, not even lived experience is referred to as evidence. Or to put it another way, the writing of a champion knower draws its potency from the authority of a collective - every point refers back to the vantage point of the collective in which the knower seems to have an emotional investment. This gives the writing the sense of being a highly charged, self-referential system that excludes or dismisses consideration of contradictory material.

Moving on to the signpost to certainty it can be seen that in the champion knower's self-referential world of 'we-right-good,' truth is conceived of as absolutely certain and either right or wrong. That is, the knower posits no alternative vantage point from which the world may be observed.

The champion knower's assumptions about the justification of knowing are that knowledge (truth) is articulated by authority and that statements that accord with those of authority are self-evidently true and to be extolled and enacted unexamined. That is, their implicit assumption about the process by which they can know is to ascertain the correspondence between any particular assertion and the views of authority. This approach negates the need to engage with alternative views or contradictory material. In their writing tasks champion knowers engage in the uncritical valorisation of views through using negative or emotive terms to dismiss alternatives or by excluding consideration of contradictory material. Moreover, they actively embrace and enact the knowledge that they uncritically accept. This is different to the 'hard work and

obedience' of Perry's (1970) dualists in that it emphasises the role of the knower in making knowledge manifest.

The champion knower's assumption about the structure of knowledge is that specific information is an instance of a general proposition. In other words, the champion lens is not characterised by an atomistic structure. Rather, these knowers compare specific situations with general propositions in order to determine the validity of the specific. Or to put it another way, the particular is subsumed in the general.

The champion knower is characterised by a passionate sense of agency that results from the writer's identification with collective authority in combination with an approach to the justification of knowing that actively champions a points of view. This aspect of the lens can be summarised as the knower's agency being 'high on behalf of ultimate authority. In other words, their sense of agency does not derive from a critical stance in relation to knowledge but from their role as enactors of truth.

The champion knowing lens ranges from an uncritical championing of a point of view from the standpoint of a particular role to an explicit alignment of daily life with precepts of ultimate authority. In the latter case, the point of view extolled may be an all-encompassing religious view. Another variation amongst champion knowers is that some may allow for minor criticism of authority or adopt a measured, rather than categorical, tone to advocate their position, without offering any conflicting information from an alternative stand point.

4.1.1.2 Champion lens analysed by signposts

This section discusses champion knowing using the concept of signposts to personal epistemology to capture the assumptions about knowledge and knowing in the writing tasks of four students. The discussion will include the codes that were used to identify sections of text relevant to describing the epistemological lens. As outlined in section 3.5.2, these codes were used to sort segments of text in terms of the source, certainty, structure and justification of knowledge. Two students, Emma and Malena, responded to the topic: 'Compare Australia's health care system with the health care system of another country.' Meera and Verna discussed the statement 'Women should stay home and look after the children while their husbands go out to work.'

Source of knowledge – implicit assumptions

Turning first to the source of knowledge Emma, Meera, Verna and Malena's assumptions about the source of knowledge are characterised by a merging of the knower and the source of knowledge. That is, the knower seems to identify with a collective authority thereby conveying the sense of an emotionally charged collective vantage point in her writing.

Source of knowledge codes

Codes that indicate phrases in the text related to the champion knower's assumptions about the source of knowledge are: (a) use of first person plural by author to identify herself with authority or a collective; (b) use of third person to emphasise otherness or distance from knower; (c) no explicit reference to a source of knowledge; and (d) use of first person in the form, 'I believe something' rather than use of first person to introduce lived experience.

Emma's identification with an emotionally invested collective vantage point, for example, is conveyed in her writing task by the phrases '*our Health Care System*' and '*our country*' as opposed to the otherness of the undifferentiated and distant world of '*over In Africa*.' She begins her writing task by saying, '*In Australia Our Health Care System is improving everyday*.' Then she distances herself from the situation in Africa by using the phrase '*over In Africa*' rather than '*in Africa*.' The former suggests a gulf between herself and Africa whilst the latter is more neutral specifying only the continent to be discussed rather than the continent in relation to its distance from the writer. This is what she wrote, '*The health system over In Africa do have complications in preventing the diseases which makes the health system struggle*.' Then she returns to the situation in Australia where she identifies herself with the nation by saying, '*Our Country has a better health care system than Africa for another fact which is, better environment*.' Here Emma is not intending to convey this observation as her personal opinion but as a matter of absolute fact shared by everyone.

Meera is another champion knower who makes a series of assertions about what we all know, but gives no source for this knowledge – to her it appears to be self-evident. She begins by declaiming '*As we all know, women are very important in our society and in the whole world*.' Then, writing in the third person to emphasise the universal nature, rather than the subjective nature, of her statements she continues, '*Women are part of our life. Life without women is of course impossible*.' Each succeeding

paragraph follows the same formula – writing in the third person there is an assertion of universal truth, followed by an example that encapsulates the gendered nature of truth. Thus she comes to an emphatic conclusion, and reverts to the first person plural, *‘our women are our mothers and every single child or husband need a women for their life to run normally, so women should be available at their home when ever the family need them.’* Interestingly, this writing has all the passion of the experiential knower described in section 4.1.4, but the passion is deployed in the service of an absolutist idea derived from an unspecified authority with which she identifies through the use of the possessive form of the first person plural.

Verna also follows the pattern of basing her writing task on unsourced assertions. For instance, she asserts, *‘Mother’s are the leaders of the house.’* In Verna’s case, however, she uses first person singular in the form, ‘I believe something’ to align herself with the unsourced authoritative information that she includes in her writing task saying, *‘That’s why I things mother’s should stay home and look after their children.’* In advancing this opinion as to what she thinks she differs from most champion knowers who express their opinions in terms of what the collective ‘we’ think on a subject. Nevertheless, I have classified her writing task as an example of champion knowing because it meets the criteria of the other three signposts to the champion lens.

Certainty of knowledge - implicit assumptions

As regards the certainty of knowledge, the 14 students characterised as champion knowers assume that knowledge is certain and either right or wrong because it is viewed from a single vantage point.

Certainty of knowledge codes

Codes that indicate phrases in the text related to the champion knower’s assumptions about the certainty of knowledge are: (a) absolutist or single vantage point; and (b) categories are set up as dichotomies, as black and white.

Verna, for instance, frames the issue of women and employment this way: *‘woman’s should stay home and look after the children while their husbands go out and work because children’s need their mum’s every day and all day.’* In this categorical statement, Verna merges the categories of women and mothers and sees the only option open to women/mothers as staying home because the task of child rearing is all encompassing. In other words, Verna adopts a single vantage point.

Emma, however, does refer to a contrary point of view in her writing task but the elements of the argument are set up as dichotomies, as black and white. This captures the either/or nature of the point of view expressed in the writing task. Emma's writing task, for instance, communicates a categorical view that the health systems of Australia and Africa are incommensurable. She begins her argument by saying, '*In Australia Our Health Care System is improving everyday.*' The onward march of progress in Australia is compared to Africa which does '*not have a beneficial health care system like Australia due to the air borne diseases and illness's such as AID's that are uncontrollable.*' By implication, if diseases are uncontrollable in Africa, there can be no improvement or change – Africa's health care system is irredeemably bad. By setting up the two opposing categories of good and bad health systems, however, Emma is not establishing a separate vantage point from which she can view a complex situation. Rather, Emma is viewing the world through a self-referential, single lens that accords Australia the ability to generate improvement from within its own resources, '*Australia's health care system works in coalition with all the states within itself which enables improvement and changes.*' Africa, on the other hand, cannot be considered on its own terms but only with reference to Australia. Or as Emma concludes, '*Overall, Africa has a poor health care system in reference to Australia.*'

Justification of knowing - implicit assumptions

As regards the justification of knowing, the 14 students characterised as champion knowers assume that knowledge (truth) is self-evident and is to be extolled unexamined. That is, the champion knower engages in the uncritical valorisation of views through expounding and /or enacting knowledge.

Justification of knowing codes

Codes that indicate phrases in the text related to the champion knower's assumptions about the justification of knowing are: (a) uncritical valorising lens; (b) belittling strategies such as use of negative or emotive terms to dismiss alternatives; (c) exclusion of consideration of contradictory material; and (d) enactment of unexamined knowledge.

Malena's writing task displays many of the features of an uncritical valorising lens. Firstly, she signals her emotionally invested collective vantage point as an Australian when she writes that, '*I Believe Australians are extreamly fortunate and lucky to have access to All the health care treaments we need.*' She then distances herself from,

'Many other country – such as the Third world ... Their countrys are poor and are unable to afford, medicines, treatments for those who are ill, doctors, or nurses.' She reinforces this distance by giving an emotive description of Australia as a community where people help and assist each other. She says, *'If we were to become seriously ill we live in community where there are ... nurses and doctors to help and assist us.'* By contrast, she describes the fate of those in the third world left to die with no one to help. She says, *'Many in which live in those countrys are even left to die, because there is no-one to help them.'* Malena, however, is not a passive spectator to the situation; rather she holds out the possibility of individuals making a difference to health outcomes across the world. She says, *'If we all did our part, donated, or helped one another we would have the ability to save someone else's life, and make a difference in the world around us.'* Malena clearly sees the possibility of enacting change in accordance with her categorical view of the world.

Verna utilises the strategy of excluding consideration of contradictory material to pursue an approach to the justification of knowing that typifies the enactment of unexamined knowledge. Consider for instance, Verna's statement that *'children's need their mum's every day and all day'* which frames the argument in a way that excludes consideration of contradictory material. From this perspective, even part time work is incompatible with meeting the needs of children. Verna goes on to write, *'Mother's are the leaders of the house. When children need some thing they ask their mother also mother's are the teachers of their kids. Children learn most thing's from their mother. That's why I things mother's should stay home and look after their children.'* In other words, whilst Verna is uncritically valorizing the role of the mother she is doing so in such a way as to characterize the mother as a leader in her own domain and a teacher of her children. That is, Verna's approach to the justification of knowing is not one of passivity but of enactment of a set of beliefs.

Structure of knowledge - implicit assumptions

As regards the structure of knowledge, the 14 students characterised as champion knowers assumed that specific information is an instance of a general proposition.

Structure of knowledge code

The code that indicates phrases in the text related to the champion knower's assumptions about the structure of knowledge is: everything can be accounted for within a single framework.

Meera's writing task, for instance, subsumes the particular in the general in the sense that the writing task is framed by authoritative, universal and gendered statements. This is quintessential champion knowing where the student's thinking is a closed system in which particular situations are viewed through an overarching proposition. In Meera's case, she outlines a universal proposition about women and then interprets a specific situation with reference to the universal proposition. For instance, she considers the issue of women seeking employment and states that the conditions allowing such a development are determined by the situation of the husband. She says, '*working outside home is not bad for a women to do but ... that depends if the husband need help with his responsibility of a fording the needs of the family.*' In other words, there is no suggestion that a woman could take a subjective or independent perspective on the question of employment because orthodoxy determines that a woman can only work if her husband agrees and/or needs her to do so.

Diagrammatic representation of champion knowing lens (see next page)

Figure 4.1 summarises the champion knowing lens in terms of signposts to personal epistemology. For illustration purposes, the figure only includes one example per signpost of the multiple codes that contributed to identifying the implicit assumptions about knowledge and knowing conveyed by the text.

<p>Signpost: Source</p> <p>Implicit assumption:</p> <p>Knower merges with an emotionally charged collective authority.</p> <p>Sample code:</p> <p>Use of first person plural to identify herself with authority or a collective.</p>		<p>Signpost: Certainty</p> <p>Implicit assumption:</p> <p>Knowledge is certain and either/or because it is viewed from a single vantage point -</p> <p>Sample code:</p> <p>Absolutist or single vantage point</p>
	<p>Agency: High</p> <p>On behalf of ultimate authority</p>	
<p>Signpost: Justification</p> <p>Implicit assumption:</p> <p>Knowledge (truth) is self-evident and extolled unexamined through an uncritical valorising lens</p> <p>Sample code:</p> <p>Belittling strategies e.g. use of negative / emotive terms to dismiss alternatives</p>		<p>Signpost: Structure</p> <p>Implicit assumption:</p> <p>The particular is subsumed in the general</p> <p>Sample code:</p> <p>Everything can be accounted for within a single framework</p>

Figure 4-1: The champion knowing lens by signpost

4.1.2 Passive knowing

4.1.2.1 Overview of *passive knowing lens*

The passive knowing lens, developed on the basis of 17 writing tasks, is characterised by the implicit or explicit assumption that the source of knowledge lies outside the knower. The 'distance' between the knower and the source of knowledge, however, gives the either/or conception of knowledge a less emotionally charged quality than that of champion knowers. Rather, like Belenky et al.'s received knowers (1986, p. 44) the phrase 'Authority-right-they' epitomises the passive knowing lens. Passive knowers assume that knowledge is received from authority figures, sometimes giving rise to references to an external authority in their writing tasks. The impersonal external vantage point is reinforced by the fact that passive knowers do not use lived experience to support their point of view. Rather, in the writing tasks, they draw on impersonal information that could have been gleaned from a text book to support their point of view.

The hallmark quality of a passive knower is a sense of certainty in distant external authority. In other words, unlike champion knowers, they do not identify with the source of knowledge but they do share the champion knowers' assumption that there is no alternative vantage point from which the world may be understood. The writing tasks of passive knowers are framed in polar terms in which every point refers back to a single assumption or vantage point that imbues the writing with a sense of certainty and absolute truth. That is, they assume that knowledge is either/or rather than paradoxical or ambiguous.

The passive knower's assumptions about the justification of knowing are that knowledge is to be received, accumulated and communicated unexamined. That is, passive knowers value the ability to absorb and to store the truths received from others rather than to critically engage with ideas. Because they see themselves as recipients of knowledge from distant authority, rather than enactors of knowledge or evaluators of knowledge, they convey little sense of agency.

The passive knowers' implicit assumption about the structure of knowledge is that it is built up by assembling simple, discrete, concrete facts. For a passive knower, the meaning of concrete information is self-evident.

4.1.2.2 Passive knowing analysed by signposts

This section discusses passive knowing using the concept of signposts to personal epistemology to capture the assumptions about knowledge and knowing in the writing tasks of Pedro, Preacher, Edith, Faye, Nadia and Chi. The discussion will include the codes that were used to identify sections of text relevant to understanding the epistemological lens that informs their writing tasks. Four students – Pedro, Preacher, Faye and Chi – responded to the topic: ‘Compare Australia’s health care system with the health care system of another country.’ Nadia responded to the topic ‘Describe a positive or a negative learning experience. Explain what you think makes effective learning.’ Edith responded to the topic, ‘How has your day been so far?’

Source of knowledge – implicit assumptions

Turning first to the source of knowledge, Pedro, Preacher, Faye, Nadia, Chi and Edith appeared to be primarily engaged with sources of knowledge that lie outside the self in distant authority.

Source of knowledge codes

Codes that indicate phrases in the text related to the passive knower’s assumptions about the source of knowledge include: (a) reliance solely on impersonal information; (b) frequent use of third person pronoun; (c) use of first person as a device to order information in a writing task e.g. in the form ‘I will compare x and y’; and (d) reference to an external authority in a writing task that implies that knowledge is received from authority figures.

To begin, I will illustrate how Pedro and Preacher compared the Australian health care system to the health care system of another country without reference to their lived experience and without the use of the first person plural to identify with a collective. In their writing tasks they evoked the superiority of the Australian health care system by referring to impersonal information. Likewise, although they were first generation Australians, neither of them wrote about the country with which they were comparing Australia in a way which suggested their information was drawn from lived experience.

Pedro, for instance, began his writing task from the impersonal external vantage point that, ‘*Australia is one of the developed countries in the world today.*’ To support this claim Pedro continued in the dispassionate language of a textbook or policy statement, ‘*It [Australia] has organised its medical health funding policy to maintain its health care*

to a full world standard health care facilities and systems throughout the nation.' Here he relied solely on impersonal information couched in the third person to convey his views. Perhaps even more strikingly, when he described the way that the Medicare system works at the individual level he continued in this impersonal manner as if the Medicare system bore no connection to his own wellbeing. He said, *'Australia has a well government funded health care system, for a simple Australian citizen it is called Medicare.'* Again reinforcing the lack of connection to his own situation he wrote, *'Medicare is a state wide used by an ordinary citizen's of Australia, it provides free of charge access to most medical facilities around Australia.'* The final phrase again expressed in the impersonal, third person of a textbook or policy document.

Preacher is another student who demonstrates an impersonal external vantage point. That is, Preacher's writing task documents his experience as a nurse in Africa, but curiously conveys very little sense of lived experience. Rather, one is left with a generic sense of the role that he was carrying out but not of his experience of the role. He begins by using the first person singular as a device to order information in a writing task saying, *'I have served as a Nurse since April / 1993. As a Nurse, I was doing the following: - Admit sick patients in the ward and give them their treatment, monitor their conditions...'* In other words, after introducing his role he then wrote impersonally in the third person to describe the duties of the role.

Edith's brief response to the query, 'How has your day been so far?' does not provide much evidence on which to assign an epistemological lens, but there are intimations of a passive knower. The authority in Edith's writing task is clearly her mother who *'was telling me to hurry up because she didn't want me to be late for my nursing interview.'* As the morning progresses, Edith's mother decides *'to drive me all the way to [the] University.'* From the writing task, however, we learn little about Edith personally except that in her closing statement she writes, *'I was so scared and nervous because I didn't know what I was going to expect.'* These feelings, whilst specifically Edith's, are consistent with a passive knower who, going beyond the familiar and known, experiences anxiety. Consequently, despite this reference to her lived experience, I have classified Edith as a passive knower because of the emphasis on the role of her mother as the authoritative source of knowledge as to how to organise her day.

Certainty of knowledge - implicit assumptions

As regards the certainty of knowledge, the 17 students characterised as passive knowers appeared to assume that knowledge is either/or because it is viewed from a single vantage point.

Certainty of knowledge codes

Codes that indicate phrases in the text related to the passive knower's assumptions about the certainty of knowledge include: (a) absolutist or single vantage point; and (b) categories are set up as dichotomies, as black and white.

Faye, for instance, frames her comparison of the health care systems of Australia and her country of origin in terms of a dichotomy. Firstly, she says, '*Australia is a country with a very good health therefore the country stay healthy and safe from diseases,*' then she says, '*but [country of origin] have no all the health care required for there county to be healthy and safe.*' She expands on this opening statement with another assertion that elaborates on the dichotomy between the health care systems of Australia and her country of origin. Faye says, '*[Country of origin] have low health care, medication doctors and nurses where Australia, they have all the health care needed for their country.*' That is, consistent with an absolutist or single vantage point, Faye presents one system as 'good' and the other as uniformly 'bad.'

Justification of knowing - implicit assumptions

As regards the justification of knowing, the 17 students characterised as passive knowers appeared to assume that knowledge is received and unexamined.

Justification of knowing codes

Codes that indicate phrases in the text related to the passive knower's assumptions about the justification of knowing are: (a) direct correspondence between cause and effect is implied in the text; and (b) unexamined acceptance of evidence.

In Nadia's response to the topic, 'Describe a positive or a negative learning experience. Explain what you think makes effective learning,' there is, for example, a classic expression of the assumption that knowledge is to be received. Nadia adamantly asserts that, '*A positive learning experience is when someone has teached a particular topic to someone, and they have understood everything and learnt in a way that is appropriate.*' That is, learning is the result of the transmission of knowledge from

teacher to student. Within this explicit framework, the question of what enables a student to understand *'everything'* is easy. *'A way of making sure that someone gets a positive learning experience is allowing the student to get involved in the task being taught.'* Student involvement, however, is not a critical endeavour; rather, as Nadia says, *'hand on experience is one of the great ways of getting more knowledge and experience.'* The image is of receiving unexamined knowledge and Nadia implies a direct correspondence between cause and effect – between hands-on experience and gaining knowledge. As to what happens if the student-teacher relationship is not a positive one Nadia says, *'If you get treated roughly you wouldn't want to learn anymore, and eventually you would want to quit the topic being taught.'* This conclusion is symptomatic of the either/or world of passive knowing.

Structure of knowledge -- implicit assumptions

As regards the structure of knowledge, the 17 students characterised as passive knowers appeared to assume that knowledge is simple, discrete and concrete.

Structure of knowledge codes

Codes that indicate phrases in the text related to the passive knower's assumptions about the structure of knowledge are: (a) particulars are recorded atomistically; (b) concrete information; and (c) accumulation of details or assertions devoid of an interpretative structure.

Faye, as we saw earlier, views the health care systems in Australia and her country of origin as incommensurable. She expands on this with an assertion that elaborates on the dichotomy between the health care systems of Australia and her country of origin in terms of a series of discrete, concrete attributes of the Australian system compared to that of her country of origin. Faye says, *'[Country of origin] have low health care, medication doctors and Nurses ... Australia receive clean water, frish fruits, medication and all other health care required.'*

Chi is another passive knower who compares Australia's health care system with that of her country of origin. She says, *'There are some points are similar and some points are different'* between the health care systems of Australia and [country of origin]. One of the points of similarity is that, *'Patients who visit to public hospital usually have to wait for a long wait.'* Points of difference include that, *'Throught Medicare care Australia's Government support the patients the fee of visit to public hospital. In*

[country of origin], *the patients have to paid the fee for seeing doctor.*' The writing task continues in this concrete vein and concludes, '*In Australia the patients have a lot of help from Government.*' In other words, this writing task is written as if to a template where points of similarity and difference are introduced in sequence, information is concrete and the argument is a simple accumulation of discrete similarities and differences.

Preacher's writing task, as we have already seen, is similar, mainly comprised of a myriad of discrete, concrete examples to support his argument. For instance he describes the challenges of his role as,

- *'To much work as Nurses where not enough.*
- *To many admissions daily in the ward.*
- *Lack of essential drugs and supplies.*
- *Shortage of vacccines*
- *Insecurity in district as rebels were abdapping people and killing them.'*

Here Preacher's writing demonstrates the passive knower's preference for itemised information recorded atomistically and coupled with little sense of an over-arching framework within which to interpret the information.

The passive knowing lens is summarised overleaf in Figure 4.2, organised in terms of signposts to personal epistemology.

<p>Signpost: Source</p> <p>Implicit assumptions:</p> <p>Knowledge lies outside the self in distant authority.</p> <p>Sample code:</p> <p>Use of third person pronoun to convey impersonal external vantage point</p>		<p>Signpost: Certainty</p> <p>Implicit assumption:</p> <p>Knowledge is certain and either/or because it is viewed from a single vantage point -</p> <p>Sample code:</p> <p>Categories are set up as dichotomies</p>
	<p>Passive knower</p> <p>Agency: Low</p>	
<p>Signpost: Justification</p> <p>Implicit assumption:</p> <p>Knowledge is received and unexamined</p> <p>Sample code:</p> <p>Unexamined acceptance of evidence</p>		<p>Signpost: Structure</p> <p>Implicit assumption:</p> <p>Knowledge is simple, discrete, concrete</p> <p>Sample code:</p> <p>Particulars are recorded atomistically</p>

Figure 4-2: The passive knowing lens by signpost

4.1.2.3 Comparison of champion and passive knowing

The champion and passive knowing lenses share the characteristic of being anchored outside the knower in assumptions of a right/wrong ordering of the world. The two ways of knowing, however, reflect a different relationship between the knower and the source of knowledge. That is, the champion knower identifies with collective authority that acts as an arbiter of right and wrong, thereby providing certainty, structure, a basis for judgment, and a sense of agency as an enactor of truth. The passive knower, on the other hand, does not identify with distant external authority. Thus whilst there is a basis for certainty and judgment in the dichotomy between right and wrong, there is less sense of an overarching set of beliefs or structure to guide decisions. Moreover, there is less sense of the knower's place in the scheme of things, which undermines the knower's sense of agency.

4.1.3 Individualistic knowing

4.1.3.1 Overview of individualistic knowing

In the individualistic world described on the basis of three writing tasks, the source of knowledge is not impersonal facts or the views of experts. Rather, lived experience is the source of knowledge. Lived experience, however, is validated by the cultural value of choice leading to a merging of lived experience and the authority of cultural values external to the knower. That is, individualistic knowers share with champion knowers their identification with a source of authority beyond themselves. In the case of individualistic knowers, however, cultural authority is benign because the rhetoric of choice validates lived experience.

For the individualistic knower, certainty is guaranteed by the implicit assumption that 'everyone has a right to their own opinion.' This paradoxically makes individual opinions unassailable whilst inherently validating multiple vantage points. Consequently, implicit recognition of multiple vantage points does not infuse the writing tasks with a sense of uncertainty because all views, competing or not, are uncritically accepted.

The individualistic knowers' implicit assumption about the justification of knowing is that 'opinions are a matter of individual choice.' That is, they advance arguments based on the abstract principle of rights which they often illustrate with reference to their lived experience. This validates their own decisions but does not entail engaging with different opinions. That is, their justification of knowing does not assume a critical stance in relation to knowledge. One strategy for avoiding engagement with alternative views is to resort to rhetorical questions.

The individualistic knowers' implicit assumption about the structure of knowledge is that the rhetoric of choice provides for parallel universes, thereby avoiding the necessity of a common framework within which to compare the personal choices and experiences of different people. As a result, knowledge becomes personal and particular.

For individualistic knowers a sense of agency and passion derives from their conviction that their lived experience is validated by the assertion that everyone, including themselves, has an untrammelled right to their own opinion. This validates their decisions and their right to order their lives as they please but avoids engaging with different opinions. This distinguishes individualistic knowers from champion knowers who demonstrate agency by enacting the precepts of collective authority and asserting

that dissident opinions are wrong. It also distinguishes the individualistic knower from knowers whose sense of agency derives from a critical stance in relation to knowledge. Finally, individualistic knowers are not characterised by passivity in the face of multiplicity because the cultural value extolling freedom of choice legitimates their point of view.

4.1.3.2 Individualistic lens analysed by signposts

This section discusses individualistic knowing using the concept of signposts to personal epistemology to capture the assumptions about knowledge and knowing in the writing tasks of Maureen, Rose and Hawo. The discussion will include the codes that were used to identify sections of text relevant to understanding the epistemological lens that informs their responses to the statement 'Women should stay home and look after the children while their husbands go out to work.'

Source of knowledge – implicit assumptions

Turning first to the source of knowledge Maureen, Rose and Hawo appeared to assume that the source of knowledge is not impersonal facts or the views of experts; rather, lived experience is the source of knowledge. Lived experience, however, is validated by the cultural value of choice leading to a merging of lived experience and the authority of values external to the knower.

Source of knowledge codes

Codes that indicate phrases in the text related to the individualistic knower's assumptions about the source of knowledge include: (a) writer's confidence in own opinion; (b) writing task gives individuals authority to make decisions; and (c) lived experience supports rhetoric of choice.

Maureen's opening contention on the topic of women's role is that '*No one has a right to tell a mother how she should live her life.*' That is, her response gives individuals the authority to make decisions. This is followed by Maureen offering her lived experience to implicitly support the rhetoric of choice. She writes, '*I grew up with working parents and I am now a single mother who is working and studying.*' She concludes with a resounding sense of personal agency or confidence in own opinion, saying, '*Everything that I am doing at the moment is for myself and my daughter. It's for a better future for us and I am happy.*' In other words, Maureen's advocacy of women's right to self-determination is firmly supported by her own experience, but she does not necessarily

generalise her opinion saying, *'Mothers need to be happy and if working fulfills them, then they should work.'* That is, Maureen allows for the possibility that some women may not seek fulfilment in employment thereby recognising the authority of lived experience to validate choice.

Certainty of knowledge - implicit assumptions

As regards the certainty of knowledge the three students characterised as individualistic knowers assume that certainty is guaranteed by the implicit assumption that 'everyone has a right to their own opinion.'

Certainty of knowledge codes

Codes that indicate phrases in the text related to the individualistic knower's assumptions about the certainty of knowledge include: (a) multiple vantage points – often expressed categorically; and (b) vantage point in writing task inherently validates difference.

Rose's writing task begins, *'Many people think that its a good idea that the mother stays home with the children while the husbands go to work.'* By commencing with the phrase 'Many people think' Rose signals that there are multiple points of view, rather than one unanimous view, to be considered. Moreover, she immediately articulates her own viewpoint which inherently validates difference. She writes, *'In my opinion this has both positive and negative sides.'* Rose's next paragraph, however, makes a categorical assertion about what is best for children that appears to undermine the case for the validity of multiple points of view. She writes, *'Looking at the positive side of the idea, we can not ignor the fact that mothers provide better care for childern than most fathers.'* She then supports this assertion with another categorical statement based on lived experience, *'From my personal experience as a child I beleive that the children enjoy to be in their mother's care mor than a baby seter or a childcare centre especially when they are younger.'* Then, validating a different position on the topic of women staying home she adds, *'Although there are many advantiges in the idea, there are also disadvantages.'* Referring to the biggest disadvantage to women staying home she says, *'The biggest one of them all, is the fact that the mother will have to give up her dream about her career, which is not fair, in my opinion.'* In other words, Rose's writing conveys both certainty and recognition of multiple points of view.

Justification of knowing - implicit assumptions

As regards the justification of knowing, the three students characterised as individualistic knowers appeared to assume that 'opinions are a matter of individual choice.'

Justification of knowing codes

Codes that indicate phrases in the text related to the individualistic knower's assumptions about the justification of knowing include: (a) principle of rights illustrated by lived experience; (b) argument based on abstract principle of rights, (c) rhetorical questions, (d) does not assume a critical stance in relation to knowledge.

The discussion of the justification of knowing begins by returning to Rose whose writing task explores the '*positive and negative sides*' of women staying at home to look after children. Her resolution of the dilemma of conflicting personal experience is typical individualistic knowing - she hedges her bets. That is, without a procedure for resolving conflict she avoids taking a critical stance in relation to knowledge saying, '*Having the mother looking after the kids might sounds like a good idea to a family and bad idea to another.*' This is in contrast to Meera, a champion knower, who, safely within the confines of her single point of view, relegated the issue of women's employment to meeting the needs of her husband.

Hawo begins her writing task with an argument based on the principle of rights, '*Women have the same right as men do.*' She then goes on to illustrate the principle of rights with reference to her own experience saying, '*As a mother myself I belief that I should be given the right whether I stay home and look after my child or whether I work.*' She follows with a rhetorical question, '*So why should they have to stay home while their husbands go to work?*' That is, asking rhetorical questions can be a strategy to avoid directly engaging with an alternative point of view. It can also be a strategy to avoid evaluating the choices of others whilst not necessarily making those choices invisible.

Structure of knowledge -- implicit assumptions

As regards the structure of knowledge, the three students characterised as individualistic knowers assume that knowledge is personal and particular and operates in parallel universes.

Structure of knowledge- codes

Codes that indicate phrases in the text related to assumptions about the structure of knowledge: (a) atomistic information; and (b) knowledge is personal and particular.

Hawo's writing task demonstrates the concept of knowledge operating in parallel universes. That is, she advances a passionate argument based on abstract principles. She writes, '*Life is about choices and freedom.*' Then, allowing for personal experience to determine the application of this principle, she says, '*and if a woman believes that she can look after her child and at the same time work then why can't she.*' Here a rhetorical question gives the writing passion but avoids making a statement that prescribes how all women should act. Rather, she implies that individuals have the authority to make their own decisions in their own parallel universes. The individualistic knowing lens is summarised in Figure 4.3

<p>Signpost: Source</p> <p>Implicit assumptions:</p> <p>Lived experience is the source of knowledge and is validated by rhetoric of choice</p> <p>Sample code:</p> <p>Writer's confidence in own opinion</p>		<p>Signpost: Certainty</p> <p>Implicit assumption:</p> <p>Knowledge is certain but multiple because the rhetoric of choice makes opinions unassailable</p> <p>Sample code:</p> <p>Vantage point in writing task inherently validates difference</p>
	<p>Agency: High</p> <p>Personal experience validated by rhetoric of choice</p>	
<p>Signpost: Justification</p> <p>Implicit assumption:</p> <p>Opinions are a matter of individual choice</p> <p>Sample code:</p> <p>Principle of rights illustrated by experience</p>		<p>Signpost: Structure</p> <p>Implicit assumption:</p> <p>Knowledge is personal and particular and operates in parallel universes</p> <p>Sample code:</p> <p>Atomistic information</p>

Figure 4-3: The individualistic knowing lens by signpost

4.1.4 Experiential knowing

4.1.4.1 Overview of experiential knowing lens

In the experiential world described on the basis of 18 writing tasks, the source of knowledge is not impersonal facts or the views of experts. Rather, lived experience is the source of knowledge. Moreover, the interaction between the knower and the world as experienced is the source of authority. This contrasts with the individualistic world where the merging of lived experience and the rhetoric of choice is the source of authority.

The experiential knowers' implicit assumption about the certainty of knowledge is that lived experience is an adequate vantage point for determining certainty. That is, experiential knowers see the world from a single experiential vantage point. Their sense of certainty is often reinforced by the absence of an alternative view point in their writing. This gives their writing a categorical quality and presents knowledge in either/or terms.

From the perspective of the justification of knowing, experiential knowers uncritically proffer their lived experience as evidence for a point of view. That is, they do not appeal to freedom of choice to validate their views. Rather, in the writing tasks, experiential knowers either generalise their experience to others or provide no evidence of how they would deal with differences of opinion because no conflicting opinions are considered.

The experiential knowers' implicit assumption about the structure of knowledge is that lived experience provides a framework within which both individual and general experience can be understood. That is, knowledge is experiential but can be generalised.

For experiential knowers, lived experience is the basis of their agency and advocacy on behalf of themselves or others. This distinguishes them from individualistic knowers who do not assume that their experience applies to others and whose advocacy on behalf of others is based on the rhetoric of choice.

4.1.4.2 Experiential knowing lens analysed by signposts

This section discusses experiential knowing using the concept of signposts to personal epistemology to capture the assumptions about knowledge and knowing in the writing tasks of Martha, Jim, Rosita, Naja and Gloria. The discussion will include the codes

that were used to identify sections of text relevant to understanding the epistemological lens that informs their writing tasks. Three students – Martha, Jim and Naja – responded to the topic: ‘Compare Australia’s health care system with the health care system of another country.’ Rosita responded to the statement ‘Women should stay home and look after the children while their husbands go out to work.’ Gloria responded to the topic, ‘The media and federal government are focusing on obesity as a major health issue in Australia. What are the major causes of obesity and what are some of the possible effects of obesity on the health of individuals?’

Source of knowledge – implicit assumptions

Turning first to the source of knowledge, Martha, Jim, Naja, Rosita and Gloria assume that the source of knowledge and authority is lived experience. That is, lived experience is not validated by reference to the cultural value of choice nor is it dependent on validation by impersonal facts or the views of experts.

Source of knowledge codes

Codes that indicate phrases in the text related to the experiential knower’s assumptions about the source of knowledge include: (a) use of first person to convey lived experience or opinion; and (b) a vividness of expression that speaks of lived experience e.g. conversational tone to the writing task. These codes and associated assumptions about the source of knowledge are illustrated with reference to the writing of Martha, Jim, Naja, Rosita and Gloria.

Martha compared the Australian health care system to the health care system of another country. In her writing task she began by evoking the dire conditions in her country of origin, not by referring to impersonal statistics such as mortality rates, but rather by vividly describing her experience of seeing overcrowded hospitals and death and dying. She conveyed this experience with immediacy and authenticity in this first person account, ‘*As I was saying, back in my country I have seen a lot of things, sick peoples in the hospital, not even a big hospital, small one with millions of sick peoples waiting to be treated and feel better as other. But instead they are dying because there are no good educated doctors and proper hospitals for them.*’ That is, she conveyed a clear conviction that her personal experience was compelling evidence of the nature of the health system in her country of origin.

Jim's writing task also compares Australia's health care system to that of another country. Drawing on lived experience he gives a first person account of how, '*A few years ago I travelled overseas to see my father, who was ill in hospital.*' Here he was confronted with a shocking reality when he saw, '*first hand how my sister had to bribe the doctors and nurses for them to look after my father, I was shocked and horrified to see this.*' For Jim, like Martha, his personal experience is compelling evidence of the shortcomings of health care overseas.

Rosita responded to the topic on the role of women. She begins her response in the impersonal third person but ends by locating her argument firmly in her own experience. She writes, '*In my case as a single mother of two children, I stand both mother and a father for my kids.*' That is, whilst the topic assumed a two parent family she nevertheless regarded her lived experience as relevant to the topic and framed her response accordingly.

Gloria responded to the topic about obesity. Like Rosita, she began her response impersonally in the third person, '*one of the major causes of obesity is eating too much and exercise to little and also because, every person it builded different.*' The tone to the writing task changed suddenly, however, when she introduced her reaction to watching the reality TV show, The Biggest Loser. Writing in the first person to vividly convey her heartfelt emotion she wrote, '*I watch the bigger loser and thesre are some stories that just beak yuur heart.*' In other words, Gloria shares with experiential knowers the use of first person to convey her lived response to The Biggest Loser, rather than restricting her comments to impersonal reporting. Moreover, it is her emotional response that becomes the basis of Gloria's advocacy on behalf of obese people.

Naja's epistemological lens is suggested by the conversational tone to her writing task rather than the use of first person. This is a more tenuous interpretation but I will give a sample of her writing to illustrate its flavour. Naja, comparing the health care systems of Australia and her country of origin, writes firstly about her country of origin, and then summarises the situation in Australia as, '*In Australia theres great hospitals, fantastic doctors, beautiful enviroment, great houses all these things impact on people's health.*' I classify Naja as an experiential knower because her description of Australian conditions is conversational and uses adjectives that would commonly be used in everyday speech. This gives the argument a sense of being based on lived experience even though it is not conveyed in first person.

Certainty of knowledge - implicit assumptions

As regards the certainty of knowledge, the 18 students characterised as experiential knowers assume that lived experience is an adequate vantage point for determining certainty.

Certainty of knowledge codes

Codes that indicate phrases in the text related to the experiential knower's assumptions about the certainty of knowledge include: (a) single vantage point of lived experience; (b) categories are set up as dichotomies, as black and white.

Jim's writing task, as already indicated, is based on an assumption of the validity of lived experience. He continues with certainty to build the case for the superiority of the Australian health care system by juxtaposing his overseas experience with his Australian experience. *'Having experinced working within the Hospital system [in Australia],'* he writes, *'I enjoyed how everyone worked together with a common goal. To ensure the patient can get back to there normal life as soon as possssible.'* Then he comes to the definitive conclusion, based on his personal experience, that *'having had this experince the Australian health care system is still in great shape compared to health care system overseas.'* The certainty in Jim's writing is categorical and based on his experience.

Martha, writing about her experience of going to hospital in Australia, sets up two dichotomous situations, *'As myself, being in is like being in heaven, I was sick three weeks ago, which lead me to the hospital, within an hour, I was called be the doctor and checkout my sickness. So she gave me mandicine and by now I'm way better, which if I was back in [country of origin], I would have suffered.'* Based on the vantage point of her own experience, therefore, Martha is certain that, *'Overall, health care system in Australia is better compared to mine.'*

Justification of knowing - implicit assumptions

As regards the justification of knowing, the 18 students characterised as experiential knowers uncritically proffer their lived experience as evidence for a point of view.

Justification of knowing codes

Codes that indicate phrases in the text related to the experiential knower's assumptions about the justification of knowing are: (a) lived experience proffered as evidence; (b)

advocacy on behalf of self or others based on lived experience; and (c) argument excludes consideration of contradictory material.

Jim's writing task illustrates how the justification of knowing takes the form of self-advocacy based on lived experience. Jim uses the writing task as a forum for promoting himself as a suitable candidate for the HSF course. He asserts that, '*We always need more nursing staff*' and then unhesitatingly promotes himself as a contributor to the industry saying, '*and that's way I have decided to become a division II nurse and become a positive in this industry.*' Here his argument does not engage with any material that could potentially undermine his claim for course admission; rather, he assumes his suitability for the course. He then ends with a final flourish saying, '*Thank you,*' as if addressing a live audience and underscoring the self-advocacy with which he seized the opportunity to promote his case for course selection.

Gloria's writing task, on the other hand, focuses on advocating for others based on her emotional response to their distress. That is, she explains how the self-esteem of obese people suffers from mockery saying, '*they are looked, make fun of, that breaks they self esteem.*' Gloria, goes on to confidently assert that mockery is not what obese people need and to propose that it is necessary to educate those who are making fun of the obese and make them aware of what obese people are going through. This is a complex argument, however, and not one that she can easily make within the resources of limited written English. This is what she wrote, '*That is not what they need we need to educated the people that are looked that understanding of what they are going through.*' I interpret this to mean, 'That is not what they need. We need to educate the people that are looking to understand what obese people are going through.' That is, Gloria advocates on behalf of others based on her lived response to the needs of the obese. This is consistent with an experiential lens.

Structure of knowledge -- implicit assumptions

As regards the structure of knowledge, the 18 students characterised as experiential knowers assume that knowledge is experiential but can be generalised.

Structure of knowledge codes

Codes that indicate phrases in the text related to the experiential knower's assumptions about the structure of knowledge include: (a) narrative structure; and (b) general propositions.

Rosita provides an example of an experiential knower who assumes knowledge is experiential but can be generalised. She opens her discussion of the role of women by developing the general point that partners in a marriage are a team. She says, '*the husband and wife both provide for their family in their own kinds of way. They're like working as a team for their family to reach goals.*' Having developed this general argument, however, she then moves to a narrative of lived experience making the case for how, as a single parent she assumes the role of mother and father, saying, '*It is very hard for me because I have no one to help or support me to raise my kids, but it is still my responsibility to provide for them in any way that I could.*' In other words, she is applying a general proposition about marital partnerships to her own individual situation rather than arguing that her situation is unique and an example of every one being free to make their own choices. The experiential knowing lens is summarised in Figure 4.4, organised in terms of signposts to personal epistemology.

Signpost: Source Implicit assumptions: Lived experience is the source of knowledge Sample code: Use of first person to convey personal experience		Signpost: Certainty Implicit assumption: Certainty can be determined on the basis of lived experience' Sample code: Categories are set up as dichotomies
	Agency: High On behalf of self or others	
Signpost: Justification Implicit assumption: Lived experience can be proffered uncritically as evidence Sample code: Advocacy on behalf of self or others based on lived experience		Signpost: Structure Implicit assumption: Knowledge is experiential but can be generalised Sample code: Narrative structure

Figure 4-4: The experiential knowing lens by signposts

4.1.4.3 Comparison of individualistic and experiential knowing

In order to reflect on commonalities and differences between the experiential and individualistic knowers, I will consider the signposts to personal epistemology. In both cases the knower proffers her lived experience as a source of knowledge but assumptions about the justification of knowing differ. That is, individualistic knowers validate their lived experience by reference to the rhetoric of choice whilst experiential knowers advance their lived experience directly as evidence for a point of view. In other words, the individualistic knower does not attempt to generalise her knowledge but argues that everyone has a right to their own opinion. Experiential knowers, however, are more apt to generalise their experience to others, and to advocate not only for themselves but for others. What is common to individualistic and experiential knowers, however, is that the certainty of knowledge is high. As for the structure of knowledge, individualistic knowers assume that knowledge comprises parallel universes where each person's opinion is unassailable. For experiential knowers on the other hand, the structure of knowledge reflects narratives of lived experience that can be generalised. Both individualistic and experiential knowers display a high sense of agency anchored by lived experience.

4.1.5 Tentative knowing

4.1.5.1 Overview of tentative knowing lens

The tentative knowing lens, developed on the basis of 11 writing tasks, is characterised by the writer's engagement primarily with sources of knowledge outside the self. These sources of knowledge include other peoples' experience, social mores or experts in particular fields. To the extent that the tentative knower assumes an internal source of knowledge it is implied in the writing tasks by the expression of the writer's opinions or empathy for other points of view. Lived experience, however, is not explicitly referred to as a source of knowledge.

The tentative knowers' implicit assumption about the certainty of knowledge is that in any situation there may be multiple perspectives or vantage points that are partly right and consequently need to be accommodated when interpreting diverse sources of information. That is, knowledge encompasses multiple possibilities rather than dualistic alternatives. In colloquial terms knowledge is not conceived as "either/or."

The tentative knower's assumptions about the justification of knowing are that diverse sources of knowledge are ever present and therefore need interpreting. In the writing

tasks, however, the tentative knower's processes for understanding different points of view are implied rather than explicit and include empathetic or imaginative engagement with the views of others. Processes for making judgments are embryonic but may include pragmatism i.e. 'what works' or compromise.

The tentative knower's assumptions about the structure of knowledge are that knowledge is flexible and capable of evolving.

The tentative knower's sense of agency is muted because they are engaged primarily with sources of knowledge outside the self and their strategies for making judgments are emergent. That is, they are unclear about strategies for weighing up alternative sources of knowledge and points of view. Consequently, their writing tasks do not convey a sense of engaged commitment to a point of view. Rather, they are characterised by dispassionate consideration of multiple possibilities, tentative suggestions that are contingent on workability or tentative expressions of empathy. Sometimes they seek to articulate a third alternative amongst competing options.

The category tentative knower ranges from those who uncritically report differing points of view without resolving differences to those who use empathetic or imaginative strategies to arrive at a resolution of differing viewpoints.

4.1.5.2 Tentative knowing lens analysed by signposts

This section discusses tentative knowing using the concept of signposts to personal epistemology to capture the assumptions about knowledge and knowing in the writing tasks of Mi Swe, Catalina, Marjorie and Estelle. The discussion will include the codes that were used to identify sections of text relevant to understanding the epistemological lens that informs their responses to the statement 'Women should stay home and look after the children while their husbands go out to work.'

Source of knowledge – implicit assumptions

Turning first to the source of knowledge, Mi Swe, Catalina, Marjorie and Estelle appeared to be primarily engaged with sources of knowledge outside the self. To a lesser extent they implied an internal source of knowledge by the expression of their opinions or empathy for other points of view. Lived experience, however, was not explicitly referred to as a source of knowledge.

Source of knowledge codes

Codes that indicate phrases in the text related to the tentative knower's assumptions about the source of knowledge include: (a) third person or ambiguous pronouns are mainly used in the writing tasks; (b) occasional use of first person to convey personal opinion; and (c) writing task has a dispassionate tone.

Catalina recognises multiple impersonal sources of knowledge when writing in the third person as a dispassionate onlooker. She says, *'Now a days people and families come in all shapes and sizes leading parents to make differant choices about the traditional roll of the mother.'* Subsequently, she adds, *'Australia is a country where there are many cultures, traditions an nationalties.'* In other words, she sees the world in terms of multiple sources of impersonal knowledge rather than appealing to lived experience to support her point of view.

Marjorie, another tentative knower who discusses women's role, switched between personal pronouns in her writing. Initially, she based her argument that women should not stay home and mind the children on a personal belief that she expressed as, *'I believe that the mother should not stop working after she have kids.'* Then, she continued in the third person as if not describing her own experience *'This way she will keep her confidence and will socialize more.'* In other words, she sees the world primarily in terms of impersonal knowledge but also injects her own opinion into the writing task.

Certainty of knowledge – implicit assumptions

As regards the certainty of knowledge the 11 students characterised as tentative knowers appeared to assume that in any situation there may be multiple perspectives or vantage points that are partly right and consequently need to be accommodated.

Certainty of knowledge codes

Codes that indicate phrases in the text related to the tentative knower's assumptions about the certainty of knowledge include: (a) more than one vantage point is valued; and (b) non-dualistic descriptions.

Estelle considers women's employment from several vantage points – that of the mother, the family, society and the child. The picture that emerges, however, is non-dualistic – that is the vantage points are juxtaposed but not in terms of one being right

and the other wrong. For instance, referring specifically to how society's current expectations may impact on mothers she writes, *'Mother's feel the pressure and need to contribute and be part of the workforce.'* Then she considers the impact on the family, children and society, *'On the other hand having both parent in the workforce can lead to family disintegracion, crating conflic between each family member. Kids may feel alone & neglectec, therefore unity become an issue not only for parent but society as well.'* But she also points out that children may not necessarily be unhappy with their mother working; rather, *'kids as well find themselves wanting more to keep up with the pressure of having what other kids may have.'* In other words, Estelle canvasses issues of women's employment from multiple and sometimes conflicting perspectives but assumes that these perspectives may be partly correct and therefore need to be accommodated.

Justification of knowing– implicit assumptions

As regards the justification of knowing, the 11 students characterised as tentative knowers appeared to assume that diverse sources of knowledge are ever present and therefore need interpreting. In the writing tasks, however, their interpretative skills are emergent rather than fully developed.

Justification of knowing signpost codes

Codes that indicate phrases in the text related to the tentative knower's assumptions about the justification of knowing include: (a) use of empathy or imagination to understand another point of view; (b) differences identified but not resolved; (c) identifying common threads in diversity; and (d) pragmatism or compromise.

Mi Swe's writing task includes both her assessment of the stay-at-home life style and an attempt to understand stay-at-home mothers. She says, *'In my opinion the life of women have to stay home and look after children it is boring life and hope less life.'* Mi Swe's critique of the stay-at-home lifestyle, however, does not extend to a rejection of women who adopt this life style. Rather she presents the world from the stay-at-home mothers' point of view saying, *'some women not satisfy if they husband look after their children may be the women feel like not safe and more worried about their children behide.'* In other words, Mi Swe uses empathy to understand a point of view different to her own.

Catalina introduces a common thread to understand the diversity around her by imagining the motivations of all families when she says, '*the main thing we all have in common is wanting the very best that life has to offer.*' Here Catalina's use of the first person plural differs from that of the champion knower because she is seeking to find something in common amidst diversity. That is, she recognises, '*The structure of the family has changed so dramatically with many families just having one parent.*' This acknowledges diversity at the same time that she is suggesting a common desire for the '*very best that life has to offer.*'

Marjorie, on the other hand, uses empathy to gain an understanding of a situation and then suggests a resolution to competing interests. She demonstrates the tentative knower's ability to step into another person's shoes in her commentary on the effects of women working after they have children. She says, '*This way she won't feel like a loser.*' Then like other tentative knowers she judiciously assesses the merits of women going out to work saying, '*Sometimes it can be bad and good for children.*' Then she suggests a compromise, '*That is why both parents should take balance in their work.*' In summary, Marjorie draws on empathy and compromise to recognise merit in multiple points of view.

Structure of knowledge – implicit assumptions

In the writing tasks of the 11 students characterised as tentative knowers it is assumed that knowledge is flexible and capable of evolving.

Structure of knowledge codes

Codes that indicate phrases in the text related to the tentative knower's assumptions about the structure of knowledge include: (a) changeable and evolving; and (b) flexible.

Estelle's writing task assumes that social expectations are changeable rather than constant. She writes, '*Life has change over the decades and society expectation of having a stable good economically status a high.*' Then illustrating how parents respond flexibly to social change she says, '*So parents in most cases feel the need to work. to provide a better life for the family and kids.*' That is, it can be inferred from Estelle's writing task that she assumes that knowledge is flexible and capable of evolving.

The tentative knowing lens is summarised overleaf in Figure 4.5, organised in terms of signposts to personal epistemology.

<p>Signpost: Source</p> <p>Implicit assumption:</p> <p>There are multiple sources of knowledge but they are predominantly outside the self</p> <p>Sample code:</p> <p>Third person or ambiguous pronouns are mainly used in the writing tasks</p>		<p>Signpost: Certainty</p> <p>Implicit assumption:</p> <p>Multiple vantage points need to be accommodated</p> <p>Sample code:</p> <p>More than one vantage point is valued</p>
	<p>Tentative knowing</p> <p>Agency</p> <p>Little demonstrated</p>	
<p>Signpost: Justification</p> <p>Implicit assumption:</p> <p>Interpretative processes are required and are developing</p> <p>Sample code:</p> <p>Use of empathy or imagination to understand</p>		<p>Signpost: Structure</p> <p>Implicit assumption:</p> <p>Knowledge is flexible and capable of evolving</p> <p>Sample code:</p> <p>Flexible</p>

Figure 4-5: The tentative knowing lens by signpost

4.1.6 Evaluative knowing

4.1.6.1 Overview of evaluative knowing lens

The evaluative knowing lens, developed on the basis of 13 writing tasks, is characterised predominantly by the writer's awareness of multiple sources of impersonal knowledge that lie outside the self. These sources of knowledge include other peoples' experiences, social mores, or experts in specific fields. There is also an implied internal source of knowledge expressed through an evaluative or decision-making process that conveys the evaluative knower's critical relationship to knowledge. Lived experience, however, is not explicitly referred to as a source of knowledge although some evaluative knowers demonstrate the use of evaluative procedures in the context of introducing material that appears to be drawn from personal experience but

is not explicitly identified as such. This is consistent with the large number of participants in the study who have experienced emigration and refugee status. For them, diverse personal experiences as well as the multiple vantage points of formal education may underpin their epistemological lens.

The evaluative knowers' implicit assumption about the certainty of knowledge is that knowledge can be evaluated to enhance certainty. In the process, one vantage point is often rated more highly than another to convey emerging contextual certainty amidst multiple vantage points.

The evaluative knowers' assumptions about the justification of knowing are that there are multiple sources of knowledge, the individual has a role in evaluating information in order to reach certainty in context and processes for determining certainty are available. That is, the evaluative knower is characterised by an emerging confidence in systematically applying criteria for evaluation or decision-making. This in turn implies an internal source of knowledge in the form of the knower's growing facility with evaluative and decision-making procedures. In the writing tasks, this often appears as an emerging readiness to express conclusions in the first person despite the prevailing impersonal tone of the writing task.

The evaluative knowers' implicit assumption about the structure of knowledge is that knowledge is hierarchical and interrelated rather than discrete. For instance, there may be an overarching principle or context that informs evaluation or decision-making.

The sense of agency in the writing tasks of evaluative knowers is conveyed through the emerging contextual certainty with which the authors plan, act, or express opinions based on their facility with using evaluative procedures. Accordingly, the prevailing tone of the writing tasks is a sense of confidence in the enactment of decisions or engaged commitment to a point of view after consideration of evidence within a specific context.

Evaluative knowers include those who demonstrate a systematic process for evaluating information and those who demonstrate the ability to systematically plan their activities.

4.1.6.2 Evaluative knowing lens by signposts

This section discusses evaluative knowing using the concept of signposts to personal epistemology to capture the assumptions about knowledge and knowing in the writing tasks of Vivienne, Yeshe, Hameeda, Gaye and Tasneem. The discussion will include

the codes that were used to identify sections of text relevant to understanding the epistemological lens that informs their writing tasks. Four students, Vivienne, Yeshe, Hameeda and Gaye, responded to the topic: 'Compare Australia's health care system with the health care system of another country.' Tasneem discussed the statement, 'Women should stay home and look after the children while their husbands go out to work.'

Source of knowledge – implicit assumptions

Turning first to the source of knowledge, Vivienne, Yeshe, Hameeda, Gaye and Tasneem assumed that there are multiple sources of knowledge that lie predominantly outside the self. To a lesser extent they implied an internal source of knowledge by their use of evaluative or decision-making processes. Lived experience, however, was not explicitly referred to as a source of knowledge although sometimes they use material that appears to be drawn from lived experience but is not explicitly identified as such.

Source of knowledge codes

Codes that indicate phrases in the text related to the evaluative knower's assumptions about the source of knowledge include: (a) third person or ambiguous pronouns are mainly used in the writing tasks; (b) occasional use of first person to convey personal opinion; and (c) abstract principle as a source of authority.

Responding to the topic concerning the roles of men and women, Tasneem, like the tentative knowers, wrote impersonally in the third person. She heralded her stance as an evaluative knower, however, by framing her argument in terms of the abstract principle of rights. That is, she assumes that a source of knowledge can be the realm of principle. She says, '*Australian women stay at home and men go out is not fair because men and women have the same rights.*' Unlike an individualistic knower who may draw on personal experience to illustrate the principle of freedom of choice, Tasneem continues to locate her argument impersonally saying, '*Australian women found out this not fair and they fought their rights.*' Here, whilst Tasneem continues to write impersonally about '*Australian women*', she illustrates how, for evaluative knowers, an abstract principle of rights may be a potent source of agency.

Vivienne's comparison of health care systems begins impersonally in the third person, '*When comparing Australia's health care system to that of a country such as Sweden.*'

Then she inserts her own point of view using first person to convey personal opinion. She writes, *'I beleive that the view towards the importance which the Australian Government place on providing subsidised or free preventative health care to the public lacks considerably.'* Here, the convoluted language suggests that she is self-consciously trying to adopt an objective academic writing style whilst also allowing herself to make an evaluative comment. The evidence that she advances to support her point of view, however, is strictly impersonal. She writes, *'The view of a government such as that of Sweden places major importance in providing free public health care from birth to each and every person.'* That is, she assumes that knowledge lies outside herself in facts and objective descriptions.

Certainty of knowledge – implicit assumptions

As regards the certainty of knowledge, the 13 students characterised as evaluative knowers appeared to assume that knowledge can be evaluated to enhance certainty.

Certainty of knowledge codes

Codes that indicate phrases in the text related to the evaluative knower's assumptions about the certainty of knowledge include: (a) one vantage point is rated more highly than another; and (b) multiple vantage points taken into consideration.

Yeshe begins her comparison of health care systems by saying, *'The purpose of the paper to compare and contrast of Australia and my home county [name of country of origin].'* That is, Yeshe, unlike Emma, a champion knower, begins her writing task by indicating that her comparison of health care systems is not limited to differences between the two systems. Instead, she offers a more nuanced comparison, writing *'The health care system is similar in both countries, as it [in]corporates both private and public institutions.'* She then continues her comparison by introducing material that allows health care to be evaluated in context – see discussion of her justification of knowing below.

Justification of knowing– implicit assumptions

As regards the justification of knowing, the 13 students characterised as evaluative knowers appeared to assume that there are multiple sources of knowledge, but that the individual has a role in evaluating information in order to reach certainty in context and systematic processes for determining certainty are available.

Justification of knowing codes

Codes that indicate phrases in the text related to the evaluative knower's assumptions about the justification of knowing include: (a) writing task contextualises discussion of a specific issue in a broader context; (b) systematic procedures for evaluation; and (c) enacting methodical decision-making.

Hameeda's writing task hinged around the concept of fairness. That is, she contextualised discussion of a specific issue in a broader context. For Hameeda, *'The health care system is fair as people in Australia have medicare.'* She systematically spelt out the mechanism by which Medicare ensures fairness, *'The medicare system in Australia makes it easier for people to visit doctors as often as they want is the health care expenditure is very low or of no cost to some people with the help of the government.'* The system's fairness in turn leads to better health outcomes in Australia, *'This medicare system reduces the percentage of illhealth and death rates due to untreated people.'* Again Hameeda systematically explained the mechanism by which Medicare achieves this outcome, *'Public hospitals are free of charge for people with health care cards and medicare cards which makes it easier for people to be treated if they have less money to visit hospitals.'* She concludes, *'This increases Australians life expentancy and reduces the risks of mortality and morbidity in Australia.'* That is, Hameeda locates her argument in the broad concept of fairness to argue systematically how fairness improves outcomes.

Yeshe also contextualises her discussion of the health systems of Australia and her country of origin by considering the economic situation in both countries in order to compare the two health care systems. Yeshe expresses this imperative as, *'However, since [country of origin] is one of the poorest countries in the world with 70 million population where the basic human needs food, shelter clothing, knowledge, health care are scare, it will be difficult to compare the two countries.'* Having made this observation about context, Yeshe then provides some information on specific aspects of the health care system in her country of origin such as, *'In [country of origin] public hospital is 100% funded by the government. most public hospitals run down, medical equipment scarce.'* But then she returns to her central tenet about context, *'The quality of the health care in [country of origin] on declaine in two reasons. 1. Chronic poverety caused by famine 2. EPDMC disease such as malaria AIDS.'* Not surprisingly the conclusion to her writing task again focuses on the national economic contexts, *'Australia is among the wealthiest country in the world the health system benefits all the*

citizen. In contrast [country of origin] is the poorest country where general pattern health care system are affected by poverty.' In other words, Yeshe implies that the evaluation of the two health systems must take the economic contexts into account.

As to the code, 'enacting methodical decision-making,' Meshell and Assunta are two evaluative knowers who demonstrate the enactment of methodical decision-making. Their writing is discussed in Section 4.2 since they are also interviewed for this study.

Structure of knowledge -- implicit assumptions

As regards the structure of knowledge, the 13 students characterised as evaluative knowers assumed that the structure of knowledge is hierarchical and interrelated rather than discrete.

Structure of knowledge codes

Codes that indicate phrases in the text related to the evaluative knower's assumptions about the structure of knowledge include: (a) implied hierarchy of information; and (b) writing task focuses on relations between reported phenomena.

Gaye's writing task hinged around contextualising discussion of a specific issue in a broader context. This implies a hierarchical structure to knowledge – some concepts take precedence. In Gaye's case, the concept that takes precedence is the idea that the health care system should put the needs of the individual first. As Gaye wrote, '*I preferr Australia to [country of origin]. Because in the health system individual should come first as it is in Australia.*' Gaye then compared the health systems of Australia and her country of origin in terms of how they are structured and the consequent impact on individuals. She wrote, '*While [country of origin] is funded by patients bills been pay before treatment. That is individual ... need to make payment upfront.*' She then continued to systematically explain how the health care system in her country of origin works, '*This money is used to get their durgs or they might not been look after. only people who payment are received are treated for that day.*' Then, like other evaluative knowers, Gaye went on to specify cause and effect, '*With this condition in [country of origin] lot of ill people die.*' This then brought Gaye to her conclusion, '*I preferr Australia to [country of origin]. Because in the health system individual should come first as it is in Australia.*' In other words, Gaye implies a structure to knowledge in which some concepts take precedence over others.

The evaluative knowing lens is summarised in Figure 4.6 overleaf.

Signpost: Source Implicit assumption: There are multiple sources of knowledge but they are mostly outside the self Sample code: Third person or ambiguous pronouns are mainly used in the writing tasks		Signpost: Certainty Implicit assumption: Knowledge can be evaluated to enhance certainty Sample code: One vantage point is rated more highly than another
	Agency Demonstrated through emerging contextual certainty	
Signpost: Justification Implicit assumption: Procedures for evaluating information are needed and available Sample code: Systematic procedures for evaluation		Signpost: Structure Implicit assumption: Knowledge is hierarchical and interrelated Sample code: Implied hierarchy of information

Figure 4-6: The evaluative knowing lens by signposts

4.1.6.3 Comparison of tentative and evaluative knowing

The discussion of the tentative and evaluative knowing lenses by signposts has revealed major assumptions about knowledge and knowing characteristic of the lenses. Both lenses share the assumption that there are multiple sources of knowledge that primarily lie outside the self. Both forms of knowing use reflective processes to establish certainty but the evaluative knower's approach to the justification of knowing emphasises the systematic evaluation of situations against an external standard or wider context thereby supporting emerging contextual certainty where one vantage point is rated more highly than another. The tentative knower, on the other hand, seeks to find a compromise or balance between different points of view, thereby demonstrating a non-hierarchical ordering of the world that utilises empathy or imagination to understand others and to arrive at inclusive judgments. The different approaches to the nature of certainty and the justification of knowing are underpinned

by different assumptions about the structure of knowledge. The tentative knower assumes that knowledge is flexible and evolving and the evaluative knower assumes that it is hierarchical and interrelated. Compared to tentative knowers, there is a heightened sense of the writer's agency or visibility in the writing of evaluative knowers through their expression of opinions or evaluations and their ability to plan and act. That is, what characterises the evaluative knower is an emerging confidence in systematically applying criteria for evaluation or decision-making. The tentative knower's sense of agency, on the other hand, is more muted than that of the evaluative knower.

4.1.7 Conclusion: Six lenses – three broad approaches

Section 4.1 concludes with a discussion of how the conceptual framework as applied to the writing tasks contributes to answering the broad research question guiding the current study: **How can we understand the personal epistemology of tertiary preparation students?**

In short, the application of the conceptual framework to the analysis of student writing tasks has demonstrated that six epistemological lenses can be inferred from them. In addition, it appears that the six lenses can also be conceptualised in terms of three pairs of lenses, each pair sharing an overarching assumption about the source of knowledge (see Figure 4.7).

- Champion knowing and passive knowing share the characteristic of being primarily engaged with a source of knowledge outside the self. They differ, however, with respect to the relationship between the knower and the source of knowledge. The champion knower's identification with collective authority infuses her writing with a sense of agency not found in the writing of passive knowers.
- Individualistic knowing and experiential knowing share the characteristic of being primarily engaged with lived experience as a source of knowledge. They differ, however, with respect to the justification of knowing. Individualistic knowers appeal to the rhetoric of choice to validate their experience and hence their experience cannot be generalised. For experiential knowers, on the other hand, the justification of knowing takes the form of narratives of lived experience that are able to be generalised. Both lenses are associated with a high degree of agency.

- Evaluative knowing shares with tentative knowing the characteristic of being framed by a view of knowledge as outside the self and multiple rather than dualistic. In both cases knowers are actively engaged with reflective processes. Evaluative knowing emphasises the systematic evaluation of situations against an external standard. Tentative knowing, by comparison, seeks to find a compromise or balance between different points of view, thereby demonstrating a non-hierarchical ordering of the world that utilises empathy or imagination. Evaluative knowing is associated with a higher degree of agency than tentative knowing.

The six lenses and the overarching assumption that can be inferred about each pair of lenses are summarised in Figure 4.7 overleaf.

Figure 4-7: Summary of epistemological lenses in three overarching categories

Epistemological lens characterised by source of knowledge outside the self	
<p>Champion knowing</p> <p>Identification with authority</p> <p>'We-right-good'</p> <p>Agency: High</p> <p>On behalf of ultimate authority</p>	<p>Passive knowing</p> <p>Authority distant from inquirer</p> <p>'Authority-right-they'</p> <p>Agency:</p> <p>Low</p>
Epistemological lens characterised by lived experience as a source of knowledge	
<p>Individualistic knowing</p> <p>Authority of lived experience validated by rhetoric of choice</p> <p>'Everyone has a right to their own opinion'</p> <p>Agency: High</p> <p>within framework of choice</p>	<p>Experiential knowing</p> <p>Authority of lived experience</p> <p>'I-right-good'</p> <p>Agency: High</p> <p>On behalf of self and others</p>
Epistemological lens characterised by view of knowledge as outside the self and multiple	
<p>Tentative knowing</p> <p>Authority of inclusive judgment processes</p> <p>'Third way'</p> <p>Agency: Emergent</p> <p>Little demonstrated</p>	<p>Evaluative knowing</p> <p>Authority of logical evaluative processes</p> <p>'QED'</p> <p>Agency: High</p> <p>through emerging contextual certainty</p>

4.2 Naturalistic texts and personal epistemology research

In this major section of Chapter 4, I consider whether there is any evidence collected during the study which confirms or disconfirms my contention that the writing tasks, when analysed through the conceptual framework, are a credible basis for suggesting which epistemological lens has informed the production of each writing task.

This question is addressed in a two-step process which involves focussing on the 2009 writing tasks of eight students who were interviewed in 2014. First, each of the 2009 writing tasks is interpreted through the conceptual framework and then these interpretations are juxtaposed with the students' comments on their own writing. In the first step, each of the eight 2009 writing tasks is reproduced in the form of a vignette. The vignette intersperses the text from the writing task (in its original order) with interpretive phrases that draw on codes from section 4.1 to identify implicit assumptions about knowledge and knowing. Given the brevity of the writing tasks, not all signposts to personal epistemology may be illustrated in each writing task. Where necessary, some additional text is sometimes inserted into the vignette to clarify the meaning of the student's written English. Through this process, the codes which, in their de-contextualised form, have been used to describe each epistemological lens are contextualised. This allows the reader to make a judgment as to whether the codes 'in situ' are credible interpretive devices and also provides a basis for comparing my interpretation of the epistemological lens informing the writing task with the student's own post-hoc commentary.

In step two, the vignette is juxtaposed with the student's own comments on their 2009 writing task when they were given the opportunity to read their earlier writing during the 2014 interview. Their responses are considered as evidence of the extent to which the writing tasks, when analysed by the conceptual framework, serve to identify key characteristics of the epistemological lens that the student was drawing on at the time of writing. That is, the students' comments in 2014 provide another vantage point from which to reflect on the credibility of the writing tasks as a basis for judgments about underlying epistemological assumptions,

Section 4.2 will also form a bridge to the interview findings in Chapter 5 because the eight writing tasks analysed in this section serve to introduce the eight students who were interviewed in 2014. In the discussion, the students are grouped according to the epistemological lens that is assumed to have underpinned their 2009 writing task.

There is one epistemological lens that is not represented among the vignettes, however, because, no student whose writing task demonstrated an individualistic lens agreed to participate in the study.

In light of the additional writing tasks presented as vignettes, the total number of writing tasks used to illustrate the study is presented in Table 4.1. In summary, the table shows that a total of 35 writing tasks, comprising 46% of all the writing tasks, are included as evidence for the study.

Table 4-1 Number of writing tasks used to illustrate each epistemological lens

Epistemological lens	Number of 2009 writing tasks assigned to lens	Number of 2009 writing tasks analysed by signposts per lens (Section 4.1)	Number of 2009 writing tasks presented as vignettes per lens (Section 4.2)	Total number of 2009 writing tasks used to illustrate lenses
Champion knowing	14	4	2	6
Passive knowing	17	6	1	7
Individualistic knowing	3	3	0	3
Experiential knowing	18	5	1	6
Tentative knowing	11	4	1	5
Evaluative knowing	13	5	3	8
Total	76	27	8	35

4.2.1 Epistemological lenses where source of knowledge is primarily outside the self

4.2.1.1 *Champion knowing*

Vignette 1: Emilio's 2009 writing task

Emilio began his 2009 writing task with an absolutist / categorical statement about the superiority of Australian health care. He said, '*I would believe that it is one of the best and top in the world.*' He then expands on this categorical statement by invoking the example of the situation in Papua New Guinea (not his country of origin) as a

counterpoint to that of Australia. That is, he describes Papua New Guinea's health care system from the single vantage point afforded by a comparison with Australia. In doing so he is not only demonstrating a single framework but he is also distancing himself from the situation which he is describing and attributing his views to an unidentified authority – both characteristics of champion knowers. He says, *'Papua New Guinea, they're health care system was told to be very poor. poor as in no proper sanitary areas, no education given to its inhabitants, compared to Australia who's health care system is above standard..* Emilio's reference to the situation in Papua New Guinea, however, does not provide another vantage point nor consider contradictory material. Rather, the material is framed in such a way that it confirms the single lens provided by the assumption of the superiority of the Australian system and his identification with the superior system. Emilio emphasises this by distancing himself from *'they're [their] health care system'* and from Papua New Guinea's failure to provide *'its inhabitants'* with health education. Emilio rounds off this comparison of the two health systems by explicitly using first person plural to identify with authority or a collective. In Australia, he says, *'we have been taught proper hygiene, government provided clinics and pharmacies.'* Here he demonstrates his sense of identity with the collective 'we' of the broader Australian community. The evidence that he advances to support his view derives from authorities such as teachers. As he says, *'I would say that Australia has a better health care system not just saying it but was actually taught by a year 12 Health and Human development teacher.'* In other words, for Emilio, knowledge is transmitted or received from authorities such as teachers on whom one can rely for information. Unlike passive knowers however, the author actively identifies with the authoritative opinion as in the paradigm of the emotionally invested collective vantage point. The corollary of Emilio's identification with collective authority is his readiness to express categorical opinions. This communicates his sense of his agency as a knower.

When Emilio read his 2009 writing task he confirmed much of the above analysis whilst decrying his former way of knowing. As regards his categorical statements about the Australian health care system compared to other countries he says, *'I only spoke about, umm, what's negative about it. whereas now if I was to write it, I would consider all sides of the story.'* He also confirmed that he drew on the authoritative views of parents and teachers saying, *'Whereas, back then I would've just taken it [their views] and say, 'OK thank you,' and ... I'd have revolved my answer around it.'* Recognising these aspects of his writing he ruefully exclaimed, *'to look at it, it's like I was so close minded.'* One interesting insight that he has into his writing is that, *'I think*

what stood out was personal experience... I mean, healthcare in [country of origin] ... I mean we have no firm healthcare whereas here, I mean, you can get a Medicare card, see a doctor.' In other words what Emilio is acknowledging here is the role of personal experience in forming his opinions. In 2009, however, Emilio did not distinguish between personal experience and the views of external authority but rather experienced these separate sources of knowledge as one source of knowledge with which he identified. This gave his writing the sense of being framed by an emotionally invested single vantage point that I described as a characteristic of the champion epistemological lens.

Vignette 2: Rosa's 2009 writing task

Rosa's 2009 writing task addressed the topic, 'Women should stay at home and look after the children while their husbands go out to work.' Her opening statement, typical of champion knowers, heralds the way in which she will use a series of categorical statements to support a single implicit vantage point in her writing task. She says, '*The first six years of a child's life is most important.*' That is, a categorical assertion about children's development is the criterion she advances for considering the role of women. She then goes on to signal the sense of agency characteristic of champion knowers. '*A mother should take good care to make sure she is instructing the child and preparing him / her for life's long road.*' That is, she describes the mother's role, and potentially her own role, as that of an instructor in a significant undertaking, thereby establishing that the mother is not just the recipient of instructions from authorities, but an agent of ultimate authority. She reiterates her uncritical valorising lens when she invokes religious authority to justify her views and, in the same sentence, aligns the mother's role with religious authority. She says, '*As it is quoted in the Catechism where a pope speaks of the importance of a child's young age (Give me a child up to the age of seven and he will be mine for life) mothers should also have the desire to educate their child in what is right and what is wrong.*' In other words, for Rosa, knowledge is transmitted or received from authority figures. Unlike a passive knower, however, the author has a role in enacting religious truth. Or, as Rosa says, summarising her single implicit vantage point on the role of women, '*This has been the role of a mother throughout the ages.*' Then, juxtaposing the traditional role of the mother with her critique of the world around her she concludes, '*It is a shame that everywhere we look, everywhere you see a child you see a tantrum.*' That is, she ends with the assumption that we all share her emotionally invested collective vantage point.

When Rosa read her 2009 writing task she confirmed that the content of her views had not changed. This was reinforced during the interview when she discussed the topic of the 2009 writing task in terms very similar to those she used five years earlier. This contributed to the sense that in 2014 her way of knowing was still anchored by external authority with whom she identified. This suggests that the 2009 writing task analysed through the conceptual framework did provide insights into some key assumptions that continue to shape her personal epistemology.

4.2.1.2 Passive knowing

Vignette 3: Faith's 2009 writing task

Faith's 2009 writing task addressed the topic, 'Compare Australia's health care system with the health care system of another country.' She begins her writing task from the single vantage point that, '*Australia's health care system is better than any other health care system in another country such as Africa.*' Faith then develops this point from the impersonal external vantage point of the Australian health care system, rather than from her perspective as a user of health care. In doing so, she couches her writing in the impersonal third person. She says, '*It (Australia) provides everybody with the ability to access health care in Australia where as in Africa there is no such thing as health care system.*' Here Faith distinguishes herself from the champion knowers who tended to say 'our country provides all of us with health care' rather than to use Faith's expression, '*It provides everybody with the ability to access health care in Australia.*' In making her claim Faith also demonstrates the passive knower's unexamined acceptance of evidence in that she advances no material relating to limitations of the Australian system. Faith goes on to present an argument in the form of two dichotomous categories – Africa versus Australia. She writes, '*In Africa the life expectancy of people is low because there is no change of going to the hospital due to a lot of issues such as health care system which is not available.*' On the other hand in Australia, '*life expectancy is great because the health care system is playing a big role in health.*' She ends with a reference to external authority expressed in the third person, '*They provides help and work hard to provide information that is need.*' Here she is moving from the grand sweep of the overall health care system and its impact to just one aspect of its operation – information provision. But the move from the big picture to the particular does not signify a shift of perspective to that of Faith speaking as an individual but remains impersonal – an account of what '*they*,' the authorities, do.

This confirms the sense of the writer being distant from authority and as having a low level of agency, typical of passive knowers.

Faith's response to reading her 2009 writing task during the 2014 interview seems to confirm my analysis of Faith as a passive knower. On reading her 2009 writing task, Faith, commented, *'That's good.'* She then went on to compare her 2014 writing task – also on the Australian health care system - to her original writing task. In making her comparison she demonstrated a characteristic of passive knowing that reflects the passive knowers' conception of the structure of knowledge as simple, discrete and concrete. That is, in response to my question as to whether the two writing tasks differed she focused on very specific words or phrases in the two writing tasks, rather than the underlying argument. She said, *'I did not include the life span. Yeah. Life expectancy of people. Where back then I did (laughs). But I've touched base on pretty much the access of people and I've compared. But I did not write Africa. I just compared in general.'* In focussing on terminology in this way, Faith both demonstrates the continuity in her personal epistemology and confirms my original classification of her as a passive knower.

4.2.2 Epistemological lens where source of knowledge is primarily lived experience

4.2.2.1 Experiential knowing

Vignette 4: Pavathi's 2009 writing task

Pavathi's writing task was particularly difficult to interpret because she did not expressly refer to lived experience as the basis of her opinions. On balance, however, I think that the writing task expresses a personal experiential vantage point. This opinion is supported by the following interpretation.

Pavathi appears to herald a personal experiential vantage point in her opening remarks when she uses first person to reflect on what is arguably her lived experience of the health care system in two different countries. She writes, *'The way of my understanding health care system of [country of origin], is more expensive and very hard to get an treatment ... Australia's health care system is better than to my country.'* Then, continuing to focus on the health system of her country of origin, she writes, *'In my country, health care system combined with private and goverment hospitals and some other 'Aurvadic' tharapy so on.'* This is a prelude to her conversational discussion of a crucial difference between private and government hospitals in her

country of origin, *'By the way compair with private and goverment hospitals, private hospitals very expensive.'* She then develops the comparison between the two types of hospitals in terms of a dichotomy. This is what she writes, *'The goverment hospitals tretment was free and everyone can be access. In the fact, the goverment hospitals have a big quie to get an tretment for person.'* That is, government hospitals are free but inaccessible due to long queues. By contrast, *'private hospitals very expensive and esey to accsess. According to that no waiting list to get a tretment.'* In other words, private hospitals are expensive but easy to access if you can afford the treatment. Pavathi then turns to what appears to be her lived experience in Australia writing, *'In Australia's helth care system is very reliabal to the people, Because "Medicare" will help to pay the bills.'* This supports her conclusion that *'In my way, helth system was very improve and quality.'*

This writing task clearly suffers from the limitations of Pavathi's written English, but on balance, I interpret Pavathi as demonstrating an experiential knowing lens anchored by lived experience even though much of the writing task is expressed in the third person.

When Pavathi read her 2009 writing task during the 2014 interview she initially commented on the spelling and structure of the writing task before saying, *'So, one way is good but I don't know still.'* The phrase is ambiguous but it implies some doubt about her previous opinions. Subsequently, it appears that the source of her doubt is that she now views the situation in her country of origin from different lived experiences. She says, *'Because it is good in back home if you .. really want to do just a full check-up, if you got money, you can go to expensive hospital and get check-up.'* When I said, 'Maybe that's right,' she was adamant that she was in fact right saying, *'It's so right because if I want to go to [home country] and do my dental check-ups, if I got money, I spend it and do it.'* Here she appeared to be illustrating her continued appeal to lived experience to justify her opinion but in 2014, as a person with a professional income in Australia, she is now aware of how the health care system of her country of origin could benefit her rather than exclude her.

4.2.3 Epistemological lenses where sources of knowledge are multiple and primarily outside the self

4.2.3.1 Tentative knowing

Vignette 5: Hurriyet's 2009 writing task (see Appendix G for reproduction of writing task)

In Hurriyet's writing task there is a prevailing sense of uncertainty that originates from the multiple vantage points from which Hurriyet sees the world. She opens by comparing the world of today and the world of the past. She says, *'Tecnology is being a major change in today world that we living in.'* She then compares today's world with the world of the past saying, *'If we go back and fifty years. They didn't have the technology that we have today.'* Hurriyet, moreover, sees the changing world from a non-dualistic perspective. She says, *'Computers are very beneficals most students use them for doing their home work.'* This, however, is not the whole story, or as Hurriyet says, *'However, there is always an disadvantage. Young people are wasting their time on their computer.'* Then in an interesting development Hurriyet provides yet another perspective on technology – its impact on society at large through its impact on employment. She says, *'Also another disadvantage would be there is machines in shopping centers, eg in Big W, and Safeway there is machines that you go and put your staff you want. That means people are losing their jobs.'* In other words she uses empathy or imagination to evoke the implications of technological change on ordinary lives. In her closing paragraph, Hurriyet expresses her own point of view on the subject, thus becoming visible in her writing task which has predominantly drawn on impersonal sources of knowledge. She says, *'I personally think that it is good that we have all this technology.'* Immediately, however, she qualifies her opinion saying, *'it would be really good if they can stop going to far because it can cause alot of problems in our world that we leving in.'* That is, having identified advantages and disadvantages in technology she looks to impersonal authority to find a balance or compromise thereby conveying a muted sense of her own agency.

At first reading, it was difficult to decide whether to classify Hurriyet as a tentative knower or an evaluative knower. On balance, however, I thought that the way she canvassed the advantages and disadvantages of technology before expressing the hope that *'they can stop going to far'* is consistent with a tentative knower rather than with the emerging certainty of an evaluative knower based on the application of a systematic process for evaluating information. What I was clear about, however, was that Hurriyet's writing task was characterised by the uncertainty of multiple vantage

points and therefore I did not regard her use of the plural first person pronoun 'we' as presaging the champion knower's identification with absolute authority in a certain world.

When Hurriyet read her 2009 writing task during the 2014 interview she confirmed my contention that she was preoccupied with capturing the pros and cons of technology. She commented, *'My beliefs are still the same.. ... There's good sides and bad sides. There is always advantages and disadvantages with technology. It is still affecting our daily life. Yeah. But at the same time, it is good as well.'* This is consistent with a tentative knower's conception of truth as multiple rather than "either/or" and suggests that my focus on this aspect of the writing task was an important marker of her personal epistemology.

4.2.3.2 Evaluative knowing

Vignette 6: Liz's 2009 writing task

Liz opens her 2009 writing task with an assertion that could suggest an individualistic or evaluative lens. She writes categorically, *'The decision of whether or not a mother should stay at home with her children is completely up to the individual family.'* Despite couching her argument in terms of freedom of choice, however, Liz, unlike an individualistic knower, does not draw on personal experience to support her argument but writes impersonally about women in general. This is more consistent with an evaluative knower. She writes, *'These days women are sent to school and are encouraged to fulfil their potential, they attend University and entre the work force along side their male counterparts.'* Then expressing certainty about the principle of freedom of choice as a basis for decision-making Liz continues, *'When the time in a women's life comes, the time when she chooses to start a family the choice of staying home to raise her family or completing her maternity leave and returning to work are completely up to her!'* She reinforces her recognition of multiple points of view saying, *'On the other hand if a women is either, lucky enough not to have to work or is unable to because of her childs dependency upon her then the choice to be a stay at home mother is a respectable choice.'* Liz rounds off her writing task by canvassing the case for and against her position, *'Soceity has opend it's eyes to the advantages of women in the work force.'* Then she addresses the counter argument that children may be disadvantaged, *'the home life for families with two working parents have no clear disadvantages to those with stay at home mothers.'* All of which supports Liz's

emerging certainty amidst multiple vantage points, '*So mothers do not have to say at home while their husbands go to work,*' she writes.

In summary, Liz's writing task demonstrates an emerging evaluative epistemological lens where she systematically presents different impersonal points of view. Like an individualistic knower, however, she shies away from making a statement about one point of view being better than another. On the basis of her developing ability to build a case for a point of view, however, I classify her as an emerging evaluative knower rather than an individualistic knower who would appeal to lived experience and the rhetoric of choice to justify giving equal weight to different opinions.

When Liz read her 2009 writing task during the 2014 interview she indirectly confirmed my contention that her earlier opinions were not deeply rooted in her own experience. She said, '*I guess it kinda makes me really realise that, umm (pause) .. I kinda know what I would want for myself [now].*' That is, she implies that in 2009 she did not have a sense of certainty about what she wanted for her own life. Her next comment, moreover, suggests that she may now be a fully-fledged individualistic knower supporting the rhetoric of choice from personal experience. That is, she said, '*Which I think is nice. When .. you have a, not necessarily, something that you wanna project to others, but something that you're certain of.*' But later when I asked her if there is anything that she would change about what she wrote in 2009 she said, '*Not really, 'cause I agree, like, mums can stay home if they want, but ... overall .. you need a lot of different aspects in your life. You can't sort of just be one (pause) facet.*' That is, Liz is implying that despite the principle of freedom of choice, on balance she believes that combining parenthood and employment is the better option. This is consistent with an emerging evaluative knower. Importantly, however, this segment of the interview also illustrates how individuals may simultaneously draw on epistemological assumptions characteristic of more than one lens.

Vignette 7: Meshell's 2009 writing task

Meshell chose an unlikely topic to demonstrate the epistemological perspective of an evaluative knower – that of everyday decision making rather than the evaluation of a public policy issue such as health or the role of women. But her opening sentence immediately heralds her epistemological lens. When asked 'How has your day been so far?' she wrote, '*Today has been quite orderly.*' And orderly it was, as Meshell methodically took charge of her own day saying, '*I woke up at 7 am, had a shower, got dressed, ate some breakfast and left home to go to Centerlink.*' Here Meshell not only

demonstrated her orderliness, but also her independence - nowhere in Meshell's writing does an authority figure such as a parent or teacher appear to supervise her preparations for the interview. Despite Meshell's best efforts, however, everything did not go to plan, '*Thinking that I was really early, I underestimated the fact that everyone would have the same mental as me and come early.*' In other words, Meshell was confronted by the reality of multiple vantage points – each Centrelink client had planned their day from their own point of view thereby presenting Meshell with an unexpected challenge in quickly completing her Centrelink appointment. Meshell reviewed her options and amended her plans, '*I thought to myself that I didn't want to leave a bad impression on my [name of university] Uni interviewer, left my first place in line to catch the train at 10.10am.*' Here Meshell took on the vantage point of the university interviewers, decided that she did not wish to make a bad impression on them and rapidly evaluated the practical options open to her in ensuring that she attended her university interview on time. Meshell's planning is then rewarded as we see in her continuing systematic first person account of her day, '*Arriving on time to the train station, I finally had a moment to take a brake and have some nuts and peaches that I had in my bag.*' The use of first person in Meshell's writing task is not typical of an evaluative knower but she so clearly enacted methodical decision-making whilst navigating multiple points of view that I characterise her way of knowing as evaluative rather than experiential.

When Meshell read her 2009 writing task during the 2014 interview she commented, '*I haven't changed.*' By this she meant that her tendency to look at options from the point of view of others is still a strong element in her thinking. She went on to say, '*You know, my ethics haven't changed. .. So, I didn't want to make a bad first impression then and nor do I want to make one today.*' This suggests that, as in 2009, she would evaluate her practical options with reference to the expectations of those around her. This is a characteristic of evaluative thinking in a practical context.

Vignette 8: Assunta's 2009 writing task

The characteristics of the evaluative knowing lens were also exemplified in Assunta's 2009 writing task. Assunta, like Meshell, responded to the question 'How has your day been so far?' rather than one of the topics on a public policy issue. Her opening phrases, however, convey a sense of portent that transcends the mundane nature of the topic. She writes, '*The day is warm and nice today, it is a very important day for me,*' thereby signalling to the reader that what may seem a small step to some has

great significance for Assunta. She completes the sentence by explaining that the day is significant *'because I got interview at [name of university] for my Cert IV Health Science Foundation.'* Within the one sentence then, Assunta moves between two vantage points - the life changing and the day-to-day – thereby giving the first intimation of her epistemological lens. She then continues with the minutiae of the day, *'I was a bit late because the train was cancelled,'* but again changes vantage point within the one sentence by standing in the shoes of university staff and considering the implications of the train's cancellation from their view point. She says, *'but I called them up and let them know that I am going to be late.'* Here, Assunta appears to be among the evaluative knowers who, like Meshell, develop their evaluative skills in a practical context. She then continued with her first person account of her day saying, *'and I arrive the place by 10:20. And did my written test, but unluckly my answer were not all correct.'* She then continues by explaining that she sees her studies as a series of steps, suggesting the structured approach of an evaluative knower, *'but just still hoping that I can get in to the course. So that it can leads me to the main course I wanted to do next years.'* She continues in this systematic vein and, in the process, conveys a sense of agency, *'I know I have to work hard and try by best and study as much as I can so that I can transfer in to another UNI.'* In other words, as well as conveying a sense of the significance of her day, Assunta's writing task also articulates a strategy, a procedure, for achieving her goal, characteristic of evaluative knowing in a practical context.

When Assunta read her 2009 writing task during the 2014 interview, the significance of her studies was powerfully underscored by the intense emotion that reading her earlier work elicited. When I asked what stood out for her she paused, let out a deep breath and said, *'I can see what I've achieved.'* Then after another pause added, *'Yeah, I remember this day. Yeah, I remember the day.'* Prompted by me to expand on what she had achieved Assunta said she had achieved, *'In my work, in my life, in my studies. Everything.'* In other words, the systematic planning conveyed in her 2009 writing task had paid off. Then speaking specifically about her intellectual development she paused again before making an implicit comparison between 2009 when she wrote about her day and 2014 when she compared health care systems. She said of herself in 2014, *'if you throw me some topics, I think I can think more of the idea[s] compared to' 2009.* That is, her practical evaluative skills have now been extended to a more theoretical context. Then to emphasise the significance of this she added that her achievement may not be, *'too much compared to you or others, (laughs) but for myself*

I think, compared to 2009 ...' At which point, her voice faded away before she let out a deep breath and paused before saying, *'Very emotional.'* Overcome with tears she added, *'Sorry! Sorry!'* while dabbing her eyes. After I had allowed time for her to compose herself I apologised for presenting her with her 2009 writing task if it had been too unexpected and too upsetting. But she said, *'That's OK. It's a happy tears.'*

4.2.4 Conclusion: Naturalistic texts

Section 4.2 has focussed on the 2009 writing tasks of eight students who were interviewed for the study in 2014. Each writing task was presented in the form of a vignette comprising the whole writing task interpreted through the conceptual framework. I then reported the students' retrospective reflections on their 2009 assumptions about knowledge and knowing. These reflections were gathered in the course of the 2014 interview. On this basis, I compared my interpretation of the student's personal epistemology with their own reflections. The process demonstrated that my understanding of the students' epistemological lens as revealed by the conceptual framework was consistent with their own reflections on their 2009 assumptions about knowledge and knowing.

The vignettes have also served to introduce the students whose interviews are the focus of Chapter 5. They provide a complex picture of personal epistemology where the 'ideal types' captured by signposts become more nuanced when considered in relation to whole writing tasks and specific individuals. The vignettes thereby provide an informative context in which to begin considering the interviews and their interpretation.

Chapter 5: Findings from Interviews

Chapter 5 addresses the third research question: How may interviews with former tertiary preparation students contribute to our understanding of their personal epistemology? It also contributes to addressing the fourth research question: What understandings about the personal epistemology of tertiary preparation students emerge from the application of the conceptual framework to the research materials?

The chapter comprises seven reports of six individual interviews and one composite interview based on two informants. The interview recruitment process was intended to ensure that at least one interviewee was recruited for each of the six epistemological lenses identified on the basis of the 2009 writing tasks (section 3.3.2). In practice, however, the attempt to recruit an interviewee whose 2009 writing task was categorised as framed by an individualistic epistemological lens was unsuccessful. Consequently, the recruitment process led to the outcome summarised in Table 5.1.

Table 5-1: Number of interviews per lens

Number of interviews		2009 Epistemological lens	Pseudonym of interviewee
	2	Champion knowing	Emilio Rosa
	1	Passive knowing	Faith
	0	Individualistic knowing	NA
	1	Experiential knowing	Pavathi
	1	Tentative (Inclusive) knowing	Hurriyet
	3	Evaluative knowing	Liz Meshell Assunta
Total interviews	8		

In terms of determining whether to report interviews individually or in composite form and in which order to present them the following process was followed. Each interview was analysed using the conceptual framework proposed in the Literature Review, then

a judgment was made as to the student's epistemological lens in 2014. On this basis, it became apparent that whilst there were two interviewees (Emilio and Rosa) whose writing tasks were deemed to have been framed by a champion knowing lens in 2009, only one of the interviews appeared to be framed by a champion knowing lens in 2014. As a result, both interviews are discussed because they offered different insights into champion knowing. In the case of the three interviewees whose writing tasks were deemed to have been framed by an evaluative knowing lens in 2009 (Liz, Meshell and Assunta), two of the interviews appeared to be framed by an evaluative knowing lens in 2014 and one by a different lens in 2014. As a result, Liz and Meshell's interviews were used in composite form as exemplars of evaluative knowers whose lenses had not changed during the period 2009–2014. Assunta's interview was reported individually because it demonstrated additional epistemological assumptions to those that were identified as associated with an evaluative knowing lens in 2014, thereby raising issues of how to categorise Assunta's personal epistemology. Where there was only one interviewee for a 2009 epistemological lens that interview was used irrespective of the knower's epistemological lens in 2014. Consequently there are interview reports for Faith, Pavathi and Hurriyet.

In summary, the seven case studies are presented in the following order based on the interviewees' epistemological lens in 2009:

Champion knowing

- Emilio
- Rosa

Passive knowing

- Faith

Experiential knowing

- Pavathi

Tentative (Inclusive) knowing

- Hurriyet

Evaluative knowing

- Liz/Meshell
- Assunta

The interview reports provide holistic descriptions of the meaning-making, personal epistemology and agency of students who were featured in the vignettes in Section 4.2. These holistic descriptions provide comprehensive evidence of the student's

assumptions about the source, justification, certainty and structure of knowledge as well as their sense of agency.

The research materials on which the interview reports are based are the interview transcripts and the writing tasks undertaken during the interview. The interview reports provide an opportunity to apply the conceptual framework to two different types of research materials generated in the same time period for the one individual. This facilitates a comparison of the insights into personal epistemology that are provided by the interviews and by the writing tasks.

Each interview report comprises the following elements:

- An introduction that summarise the interviewee's epistemological lens in 2009;
- The application of the conceptual framework to the 2014 writing task and preliminary classification of the epistemological lens informing the 2014 writing task;
- The application of the conceptual framework to the analysis of the interview transcript. That is, the interview is considered in terms of the signposts to personal epistemology - source, justification, certainty and structure of knowledge and the associated agency of the knower;
- Conclusion to each interview report that highlights the main features of the interviewee's epistemological lens in 2014

Chapter 5 concludes by outlining the implications of the interviews for: the categorisation of the interviewees; the description of the epistemological lenses identified in Chapter 4; the number of epistemological lenses revealed by the study; and understanding how multiple lenses may influence individuals. The implications of the interviews for the study more broadly are considered in section 6.3.

5.1 Champion knowing

5.1.1.1 Interview 1: Emilio

Emilio's 2009 writing task compared the health care systems of Australia and Papua New Guinea. I interpreted Emilio's comments on his 2009 writing task as supporting my analysis that it was framed by a champion knowing lens. By 2014, however, his comments dismissing his earlier categorical statements and dependence on authority figures suggested that he no longer saw the world through the same lens as in 2009.

5.1.1.2 Application of conceptual framework to 2014 writing task

In 2014, Emilio responded to the topic, 'Consider some of the major changes that have taken place in the world in recent years. Describe one of these changes. Discuss whether the change has been beneficial.' His opening remarks convey a sense of certainty, *'Without no doubt that one would notice a change in the world, especially an individual of this current generation where nothing is a secret.'* The use of the ambiguous pronoun 'one' distinguishes the sense of certainty he now expresses, however, from the sense of certainty conveyed by champion knowers who use the collective 'we' to identify with authority. He then compares the vantage point of the 'current generation' to 'earlier times' when *'news was a luxury to have where as compared to now that it is taken for granted.'* That is, his writing is no longer framed by the single vantage point of a champion knower. As to the justification of knowing, his argument is implicit rather than explicit. He writes, *'certain individuals in the media would rather alter certain information to give it extra appeal to the targeted audience.'* Then, he goes on to say that, *'News in modern time has been rather untrustworthy due to the media.'* This sequencing of information suggests that the media's targeting of information to certain audiences makes its reporting untrustworthy. In other words, Emilio does not demonstrate the evaluative knower's systematic approach to developing an argument but there is an implied process for judgment characteristic of a tentative knower. Emilio then points out the irony of the media being both the source of the news and the source of its bias. He says, *'News in modern time has been rather untrustworthy due to the media which is ironic given that they are the source of it.'* Here, Emilio is also displaying the tentative knower's practice of identifying differences or issues but not resolving them. In other words, he is exercising an emerging capacity for judgment although his process for arriving at his conclusions is not systematically developed. It is also not clear whether he is drawing on personal experience or impersonal knowledge in the construction of the writing task.

In summary, the 2014 writing task suggests changes in Emilio's epistemological lens. Emilio now demonstrates characteristics more aligned to a tentative knower than a champion knower.

5.1.1.3 Application of the conceptual framework to analysis of interview

I now analyse Emilio's interview using the signposts to personal epistemology - source, justification, certainty and structure of knowledge and the associated agency of the

knower. The analysis is also informed by comparisons with the assumptions about knowledge and knowing captured in the epistemological lenses described in Chapter 4.

Source

In the interview, Emilio's sense of self as separate from external authority, begins to emerge. This confirms the impression conveyed by the 2014 writing task that Emilio's epistemological lens is no longer anchored by an emotionally invested single vantage point. For instance, very early in the interview when I asked what stood out for him over the period 2009 to 2014 he said, *'Umm, what stood out was, I think, the experience with working with other people ... like, I wanted to stand out as well.'* I interpret this to mean that in retrospect, what stood out for him were relationships with staff and students and in this context he discovered a sense of his own individual ability and ambition.

This first glimpse of Emilio's emerging sense of self is reinforced in his response to my question about what were the main influences on him in this period. At first, he is unequivocal that his parents were the most significant influence on him, *'Umm, I think that would be the major influence, honestly, my parents.'* But very quickly he revises his assessment *'Umm, then again, throughout, umm, throughout the whole entire thing, I started to realise that ... I can pass these subjects if I really wanted to.'* To me this demonstrates an emerging sense of agency and lays the ground work for a growing realisation that he has a role in knowing that is separate from adhering to the views of authority. In other words, there are emerging intimations of internal and external knowledge as separate rather than merged.

These intimations of multiple sources of knowledge are confirmed in the following exchange which begins with my question about where his ideas on the writing task topic come from. Emilio says, *'my ideas is (pause)..., possibly from what's current now. I mean everything is pretty much out there.'* In other words he has moved from a predominant dependence on the views of external authority represented by family and teachers to a more amorphous source of external knowledge – information in the media. Very quickly, however, his own role in knowing comes back into view in response to my question about where his ideas, in general, come from. He says, *'I think it's the influence of what's around me to be honest. Umm, the people, the media, myself - how I may perceive certain things, I think that's the main influence.'* Here again he demonstrates that he no longer accepts information as given but scrutinises it from his own perspective.

The issue of how he perceives certain things, however, is not simply an academic issue for Emilio. He explains that, *'I was raised in a Catholic home where we do prayers every Sunday. We still do to this day and, umm, like, the truth for me is that.., 'Is there really a God?'* That is, he is beginning to distinguish his perception of certain things from the perceptions of his family and religious authority. Specifically, he is beginning to see that he has both an internal, individual, view of religion and an external view associated with his family and religious authority. He starts by associating himself with the point of view within which he was raised, *'I'm Catholic, I believe in God.'* Next, however, he identifies for himself that *'Umm, there is, er, internal and external point of view about judgment when it comes to beliefs and how to execute them.'* It then becomes apparent that the internal point of view is his personal point of view and that the external point of view is a traditional view of the omnipotence of God. He says, *'my internal belief is that not everything happens for a reason. But my external belief says that God is in control of everything.'* This is a remarkably explicit distinction between internal and external sources of knowledge. He does not reject the external belief out of hand, however, saying, *'I find nothing wrong with that.'* Rather, he goes on to underline the multiplicity of sources of knowledge, by adding that whilst it is difficult to explain, *'There are times where (pause) I'd see it to be that I'm the one in control and I can execute these things from my knowledge, from my experience without consulting God.'* This radical change in perception is another example of Emilio subjecting received truth to review in the light of his own experience, while not adopting an either/or stance as regards the source of knowledge.

Justification

Emilio's discussion of religion, however, reveals not only changes in his assumptions about the source of knowledge but also demonstrates a characteristic feature of his justification of knowing. For instance, having posed the question, *'Is there really a God?'* he says, *'Yes, there is.'* But after a pause he continues, *'but again with myself I'd question it because ... It's just the way who I am. I'd rather question something that I can't phantom [fathom], or I can't see for myself.'* Here we see a characteristic of Emilio's justification of knowing – his deeply questioning perspective on the world. That is, Emilio's first response to information is to question or doubt its veracity. Emilio says, *'I tend to doubt things. Like, especially what other people say to me because, you know, it's just, like, is what you're saying really true? I mean there's always something behind someone.'* This is in stark contrast to what he said of himself in 2009, *'Whereas, back then I would've just taken it and say, 'OK thank you,' and I'd*

have revolved my answer around it.' In fact, Emilio's questioning of the world around him becomes a leitmotif of the interview. Or, as he says, *'I'm very contradicting and that if something shows up, like, something is presented to me, I'd rather question it first rather than take it for what it is.'*

The issue for Emilio then is how to make sense of a world in which he is constantly questioning everything from global political developments to religious faith, life decisions and academic discernment. Whilst there is no single strategy for making judgments there is a theme to his deliberations that involves balancing competing possibilities, 'juggling,' in order to accommodate multiple elements.

With life decisions, for instance, there is no hope that either/or decision-making can provide answers. The best one can do is to constantly juggle competing priorities knowing that at any moment the situation could change and require re-assessment. For instance, one might decide to study full time in order to do well at one's studies only to find oneself in financial difficulty. Emilio puts it this way, *'With juggling school and work ... I've considered the fact that it might take me longer to finish ... but at the same time if I was to quit working, I'd probably have times where, like, finances, pretty much and for me I find it important to keep up.'* In other words, Emilio weighs up his situation from the perspective of his own values and concludes that part time study is the better option for him because it honours his commitment to education and to financial stability.

In the area of religious faith he has a less explicit judgment process for resolving his doubts about the efficacy of prayer, but he appears to be comfortable with the idea that one prays but does not put one's whole faith in it. As Emilio says, *'I think my truth in all that is that I would pray, but the same time I would think that ..., I wouldn't put all my faith in it.'* This is not a case of simply hedging his bets, however, but is another example of him thinking of the world as complex and not amenable to one interpretation such as the omnipotence of God. As he says, *'for me it's logical to think ... there must be another explanation for why this has happened. It's not just God who's in control of who might get hurt because it's for a better purpose. That just doesn't calculate for me.'* Whilst absolute faith in the omnipotence of God does not calculate for him this does not mean that he rejects a religious perspective on life completely; rather, he sees prayer as one of several strategies for managing life and in that way maintains a connection with his family and tradition whilst forging his own path.

Structure

Somewhat analogously, Emilio is also unable to arrive at a definitive explanation of the upheavals he notes in global politics, but this does not lead him to conclude that there is no meaning to be found. Rather, he tempers his bewilderment by proposing that possibly there is an explanation that is not yet apparent. This suggests that knowledge is flexible and capable of evolving. He begins by providing an overview of his perception of international relations, *'In all honesty, from what I see in the media, which is probably a con as well, is that I see broken governments in ways that they .. somehow they're not in control.'* Then he provides examples of what he is referring to: *'I mean if you look around the world there's the Ukraine, there's The Philippines, there's ... the US where that whole government had to shut down.'* He suggests, however, that just because he cannot make sense of world politics that does not mean there is no sense to be made. He says, *'But, I was just like, 'Well the country is still standing so they must be doing something right.'* (laughs). In other words, the implicit assumption here is that there is a structure to knowledge, even if not yet comprehended, that potentially provides a framework for understanding. Without such an assumption he would have been left only with bewilderment at apparently atomistic and unrelated events.

Certainty

This brings us to the fourth signpost to Emilio's personal epistemology, his sense of the certainty or otherwise of knowledge. To Emilio the world is not totally knowable, life is movement and change – juggling with an ever present possibility of dropping the ball. With respect to academic learning, he implies that by systematically tracking down the credentials of the authors of academic papers, one can come to a high degree of certainty about a proposition. He says, *'to find an expert you must look through their past works and their ..., like again, their credentials. Only then that you could trust certain information ... and say, "OK, here it is and here's my evidence about it".'* In life, however, Emilio says, *'I don't think that you can ever be possibly sure about something. I think it's what you can settle with, it's what you can make yourself believe that I've made the right decision.'* In other words, he has developed processes for weighing evidence and options in order to provide enough certainty to make decisions. From the perspective of my conceptual framework he assumes that knowledge encompasses multiple possibilities rather than dualistic alternative, and that the options for resolving dilemmas are tentative or contingent on workability.

Agency

Throughout the interview Emilio combined references to his '*contradicting*' nature with accounts of his decision-making that illustrated that his awareness of uncertainty and multiplicity did not render him incapable of action. Rather, his self-knowledge, combined with an approach to the justification of knowledge that enabled him to make balanced judgments, infused the interview with a sense of emerging agency.

5.1.1.4 Conclusion to Emilio's interview report

Emilio's interview confirms my analysis based on his 2014 writing task that in 2014 he no longer saw the world through a champion knowing lens. That is, he did not view knowledge from an emotionally invested single vantage point. Importantly, however, the interview also provides deeper insights into his assumptions about knowledge and knowing that serve to illuminate his personal epistemology in 2014. Most striking are his comments about the source of knowledge and the justification of knowing. As regards the source of knowledge he delineates an internal and external source of knowledge and repeatedly appeals to his inner source of knowledge of himself as a '*contradicting*' person to legitimise his opinions. In this way he identifies how a change in his assumptions about the source of knowledge to incorporate self-knowledge may have contributed to a change in his personal epistemology by providing an alternative to his reliance on external authority.

He also repeatedly refers to a process of '*juggling*' as a strategy for arriving at decisions in specific circumstances. In this way he demonstrates that what I interpreted as an emerging approach to the justification of knowing is more systematic than could be determined from the writing task. That is, his apparent hesitancy to express firm opinions is an outcome of a judgment process that is oriented to accommodating different points of view – identifying a third way - rather than ranking one point of view as better than another. His judgment process is also expressive of his sense that knowledge is an evolving framework for interpretation that can provide a basis for certainty and decision or action in specific circumstances. In this way, his personal epistemology contributes to a greater sense of agency than I attributed to him on the basis of the writing task.

There is evidence in the interview, however, that Emilio may apply a more evaluative approach to academic knowledge and holds out hope of more certainty in this domain

based on a process of systematically tracking down the credentials of the authors of academic papers.

5.1.1.5 Interview 2: Rosa

Rosa's 2009 writing task responded to the statement 'Women should stay at home and look after the children while their husbands go out to work.' In 2014, when she read her 2009 writing task, she confirmed that the content of her views had not changed and later in the interview discussed women's employment in terms very similar to those she used in 2009. I concluded, therefore, that it is likely that her epistemological lens in 2014 had not changed and remained that of a champion knower.

5.1.1.6 Application of conceptual framework to 2014 writing task

Rosa's 2014 writing task responded to the statement 'Describe a positive or negative learning experience. Explain what you think makes effective learning.' From the outset she frames her response as an absolutist or categorical statement writing, '*Learning to learn. This statement seems to hold the key to everything we want and need to store into our brain as students, and in particular, tertiary students.*' Here she is making a universal claim on behalf of all students using the first person plural typical of an emotionally invested single vantage point. She also excludes a critical stance towards knowledge from her definition of learning. Rather, she claims that there are absolute truths for tertiary students to store in their brain. She goes on to say, '*As I grew, and understood that learning is my and only my responsibility, I began to research way that will help me retain and remember information with less effort.*' Here she is ascribing an active role for herself in learning, but not in the sense of critically evaluating information but rather in remembering information. She rounds off her writing task by proclaiming '*it is now **MY** responsibility to learn and to know **HOW** to learn.*' This is an assertion of individual responsibility but within the tight constraints of accepting unexamined authority.

In summary, the 2014 writing task suggests that Rosa still demonstrates the characteristics of a champion knower. To the extent that change has taken place over the preceding five years it appears to have taken the form of an intensification of her identification with authority. Simultaneously, her sense of individual responsibility for acquiring knowledge also seems to have intensified. The interview analysis will provide further insight into her personal epistemology.

5.1.1.7 Application of the conceptual framework to analysis of interview

I now analyse Rosa's interview using the signposts to personal epistemology and comparisons with the assumptions about knowledge and knowing captured in the epistemological lenses described in Chapter 4.

Source

One of Rosa's key assumptions about the source of knowledge is conveyed by her assertion that, *'I had to learn on my own skin that (pause) 75% of the time, you should just stay quiet and observe.'* That is, knowledge lies outside the self and the knower's role is passive. Extraordinarily, Rosa attributed this learning to personal experience. Here is her story. When Rosa was a younger woman she strongly supported women remaining in the workforce after they had had children. Or as she said, *'I was very opinionated about this topic.'* According to Rosa, however, her experience teaching Bible Studies to children led her to change her mind. In this setting, she says *'I could see how a child is when the mother was working (pause). And then I could see how a child is when the mother is at home all the time.'* Based on these observations Rosa concluded, *'Although women don't have to stay, if they do, they give the child a better start in life.'* From Rosa's perspective then, her teaching experience led her to change her opinions on women's employment and to reject her former opinionated self, *'I was very opinionated and it burnt me.'*

To me as the interviewer, however, it is not clear to what extent her learning derived from her lived experience and to what extent her experience was mediated through an authority figure. This is because she later explained the change in her views in a different way. In response to a question from me about experts she gave this account of how her views on working mothers changed. She said, *'I was very opinionated about this topic once upon a time. Because, why ... should women stay home? And there was a Bible worker in my church and he explained it to me in such a way it just made sense.'* In other words, in this second account, Rosa's change in opinions was not based on observation but on the explanation of an authority figure.

One way of accounting for the two divergent descriptions of Rosa's change of heart is to regard it as an example of the merging of Rosa's sense of internal knowledge derived from experience with the external knowledge that derives from religious authorities with whom she identifies. She went on, for instance, to describe the Bible worker as an expert *'because he has been working for so many years and he studied*

so much and he's done missionary college and he was an expert in that topic.' In other words, his opinion could not be discounted and possibly, therefore, her personal experience was reinterpreted in that light.

Another example of where the boundaries between Rosa's sense of self and her religious community seemed to blur relates to Rosa's concept of becoming a better person. During the interview she referred several times to '*the importance of becoming a better person*,' but linked this concept not to self-knowledge but to the teachings of the church. She said, '*Umm, my church is very strong on that. You have to be the best person that you can be.*' Reinforcing the fact that this approach to self-development is not Rosa's personal strategy but rather the views of a church prophet, Rosa goes on to say, '*we have, umm, a prophet that has written many books and in our church. So we read those and she constantly talks about being the best person that you can be.*' In other words, Rosa is very explicit in situating her approach to life in the teachings of the church rather than in an internal way of knowing.

Justification

Consistent with this blurring of internal and external sources of knowledge, Rosa displays an approach to the justification of knowing that I characterise as the enactment of unexamined knowledge. During the interview Rosa emphasises the importance to her of personal development but outlines strategies for knowing that are very externally directed. She says, '*the things that matter for me, number 1 - learning how to be a better person.*' And her strategy for achieving that is to consult an authoritative source or as she says, '*The Bible tells it all. The Bible tells it all. And then, going beyond that, books. There's nothing you can't learn in a book.*' In this context, it seems likely that when Rosa speaks of valuing knowledge she is not speaking of personal insight but of preordained teachings that are to be actively and uncritically embraced.

Beyond the Bible and books, however, there is also the role of observation in allowing one to become a better person. She says, '*in order to be that way, you have to observe what makes a good person. So, you watch the people around you and you notice what do you like and what you don't like.*' In other words even the process of personal growth does not begin with a looking inward to observe oneself, but with a looking outward to observe others. This observation of others then allows you to '*make a note of it and say, 'I really want to be that way.*' This approach to the justification of

knowledge gives priority to an externally oriented way of knowing that views information through a single lens.

In the world of academia too, Rosa looks to authoritative sources for answers. She admits ruefully to sometimes consulting Google for information but credits her university studies for teaching her to be more discriminating. In answer to my question about how she can be certain about something, she says, *'Well, the first temptation is Google (laughs). But an answer can always be found through ..., and thankfully now that I've been to university, journals and books. A certain[ty] can always be found in studies, in journals and in books.'* This answer is completely consistent with her view that in matters of personal development one can rely on the authority of the Bible and books.

Certainty

Not surprisingly, Rosa's personal epistemology is associated with great certainty about the nature of knowledge. When I asked her whether she believes that there are no right answers, whether any opinion is as good as another she unhesitatingly dismisses this idea. She said, *'Of course there is a right answer. Two plus two always equals four.'* She did soften this categorical statement a little by adding, *'I think that there are things that are grey areas and some things that we don't know the answers for. But there are right answers in a lot of instances.'* Here Rosa seems to suggest that certainty is the default position, rather than the exception. As she said, *'I have searched for the truth in medicine because that's what I'm studying. I have also searched for the truth in my religion because it is very important for me to know the truth.'* That is, she explicitly articulated the belief that certainty is possible not only in religion but in her nursing studies.

Structure

Rosa's assertion of the certainty of knowledge and its origins in the revealed truth of her religious community, however, does not seem to allay her sense of anger at the harshness of life. Reflecting on her experience since leaving school she says, *'I started working in aged care, I learnt that life is hard. I work very hard, very hard and I get peanuts. And I barely survive on that.'* When I asked her whether she expects life to be equally tough when she has completed her nursing degree, she was adamant that things are not likely to improve. She said, *'My Mum's a nurse. .. And we hardly see her. .. She always has a negative connotation. Always, 'Why do I have to go*

again? The rhetorical question skirts around Rosa's dilemma that low wages and unsociable hours undermine family life. That is, a number of Rosa's certainties are in conflict.

Firstly there is her pursuit of the task of becoming a better person which is associated with being a nurse and helping people. Secondly, there is the experience that a nursing career, because of its long hours and inadequate pay scales, *'steals me from my family.'* This pits her pursuit of being a better person against her participation in family life. Her resentment at her situation is palpable but, without a sense of the structure of knowledge as flexible and evolving, her assumptions become a straitjacket.

Structure: abstract or concrete knowledge

In terms of the structure of knowledge, Rosa also seems focussed on practical and concrete knowledge rather than abstract theological questions. The work of becoming a better person, for instance, is about observation of behaviour and adoption of behaviour that one admires. Her discussion, too, of putting her beliefs into practice does not engage with abstract ideas but with behaviours. She says, *'I believe in going to church on Sabbath, which is Saturday and I put that into practice every week. I don't work, I don't shop. I don't go out for pleasure.'* The challenges too that she enumerates in daily life are also concrete and practical: *'I've realised in the last year, that I've gone to work day in and day out and I haven't been shopping, may be once or twice. What am I working for? And her answer to her own rhetorical question is concrete rather than existential: 'For taxes, for fuel, for a mortgage, for (pause) registration and service. And very little much else,'* she says. That is, Rosa articulates her dissatisfaction in very concrete terms but what she conveys is a sense of quiet rage at the injustice of life.

Agency

The quiet rage reflects a low level of agency that is unexpected given the high level of agency conveyed by Rosa's writing tasks. The low level of agency seems to be related to the fact that Rosa discounts personal experience as a source of knowledge and therefore when she experiences dissatisfaction with her life she has no independent source of knowledge that she can draw on for insight. That is, having rejected her ability to learn for herself on the grounds that *'Experience only teaches you so much,'* she then places undue confidence in the opinions of authority figures. For instance, she said, *'My mother is an expert in dealing with me (laughs). She will tell me, "Rosa, you*

don't like that, trust me," [but] I have to try it ... And then you try, and she knows better.'

In other words, Rosa's ambivalence about personal experience and her intense reliance on the views of her family and religious community threads its way through her whole interview and engenders a sense of her inertia in the face of challenging circumstances.

5.1.1.8 Conclusion to Rosa's interview report

Rosa's interview confirms that in 2014 she still sees the world through a champion knowing lens. The interview, compared to the 2014 writing task, however, sheds much more light on how Rosa's assumptions about the source of knowledge merge internal and external knowledge. Importantly, it also highlights how Rosa's personal epistemology emerges in the context of her family and church experiences as well as in the context of academic life. It demonstrates that for Rosa there seems to be a uniform approach to the justification of knowing across family and church life and academic life. That is, Rosa seems to focus on comparing situations to norms articulated by external authority and on that basis assesses options as right or wrong irrespective of context. This infuses her interview with a sense of certainty and inflexibility. One unexpected finding, however, was that her interview was not always infused with a sense of agency – a characteristic of the champion lens as described on the basis of the 2009 writing tasks. Rather, Rosa seems to be conflicted about nursing as a career but does not seem to have the tools to resolve the conflict because there is no room for personal judgment. Whereas the leitmotif of Emilio's personal epistemology is, *'I'd rather question it first rather than take it for what it is,'* Rosa has learnt to *'just stay quiet and observe.'* That is, to rein in her questioning, to rein in her internal way of knowing.

5.2 Passive knowing

5.2.1 Interview 3: Faith

Faith's 2009 writing task compared the health care systems of Australia and another country. In 2014, when she read her 2009 writing task, she focussed on specific phrases in the writing task rather than its overall argument. This suggests a passive knowing conception of knowledge as simple, discrete and concrete. I concluded, therefore, that it is likely that her epistemological lens in 2014 had not changed and remains that of a passive knower.

5.2.1.1 Application of conceptual framework to 2014 writing task

In 2014, Faith again chose to compare the health care systems of Australia and another country. She began her 2014 writing task from the same single vantage point as she began her 2009 writing task, *'Australia's health care system is the best compare to another country health care system.'* Then, however, there is a subtle change in how she develops her argument in 2014 compared to 2009. Now, as previously, Faith writes in the third person and in a way which compares other countries unfavourably to Australia but the vantage point is no longer at the generalised level of the health care system as a whole and how it affects 'everybody'; rather, it is in terms of how the health care system impacts on families. She writes, *'The health care provides families with easy access to all types of health care where as other country does not.'* Whilst this sentence is still expressed in the third person, the vantage point of the family hints at a more personal vantage point. This is confirmed when she writes, *'As I came from a different country life was hard in term of seeking for health care system.'* In other words, Faith's 2014 writing task presages a change in her assumptions about the source of knowledge from predominantly impersonal to partly experiential, but her assumptions about the structure of knowledge do not appear to have changed – information in the writing task is recorded atomistically rather than within an interpretative framework.

5.2.1.2 Application of the conceptual framework to analysis of interview

Source

In the interview, Faith confirmed my analysis that her 2014 writing task signified her recognition of personal experience as a source of knowledge. She said, *'my topic is based on my experience because I've been exposed to both environments. The environment where I find everything that I need, and the environment where I have to struggle.'* She goes on to clarify, however, that lived experience is only one way of knowing. She says, *'And I can say that I learned some stuff at school, 'cause when I came here I would not know. They didn't tell me, there was health care, umm, system, you know. So, school is important too.'* In other words, Faith continues to recognise impersonal knowledge - school learning –as important but she can now also articulate the importance of experiential knowledge.

In key passages, however, Faith's sense of herself as distant from external authority seemed to prevail over her sense of experience as a source of knowledge. This was

epitomised in an anecdote about her exclusion from the nursing degree in which she enrolled subsequent to the HSF course. Her story began when she failed a subject and, from her point of view, became subject to arbitrary, impersonal authority. She said, *once I've failed something ..., I got called into the meeting.* *They just told me, you know, umm, we don't think you're ready for the course, you know. We're just gonna remove you.* Her sense of powerlessness was reinforced when her counter argument that she had a strategy to support herself was dismissed by the authorities, *I told them ... I will join groups and I did form a group and I told [the group], "can I team up with you guys?" And then they were like, "Yeah, we'll do that next year."* Nevertheless, despite attempting to establish a peer support group, Faith was excluded from the course.

When Faith reflected on this deeply upsetting incident she demonstrated how her assumptions about the source of knowledge were in flux. Initially, she saw herself as pitted against a distant external authority with no independent source of knowledge to support herself. As she said, *I didn't have any support .. I was by myself, you know. I.., didn't know of any .., didn't seek any, umm, advice . . . So, I was in the meeting by myself.* That is, Faith as a, first-in-family tertiary student, had no personal experience or family experience to draw on as a source of knowledge. Later, she did draw on a friend's experience to understand what had happened and to guide her future action saying, *I had one friend who had that experience. But it was not to the point where she got told, "that's it," 'cause she seeked support from ... the counsellor.'*

Summarising her learning from her experience Faith said, *Before, I didn't know because I've never experienced such a thing but I went through that, I understand.'*

This seems like an unambiguous assertion of the significance of experiential knowledge. Nevertheless, as the interview continued, it was not clear what weight Faith gave to experiential knowledge and to what extent she still assumed that there is a distant source of authority to which she was not privy. To explore this issue, I further consider Faith's anecdote about exclusion from the perspective of assumptions about the justification of knowing and structure of knowledge

Justification

Faith commented that having experienced being excluded from university, she now knew what to do should a similar situation arise in future. Or as she put it, *now I know where to go, what's the next step to take.* This was interesting because it suggested that with respect to gaining support for her university studies, Faith now had a formula

for accessing assistance. What's more, later in the interview, she also talked about how she could apply her experience of university to assist her family or, as she said, *'I do, like, help my sister if she needs something because I know a bit more. Like, I know how to research articles and what's a good article, you know.'* In other words, just as she could articulate a series of discrete steps to follow in seeking academic assistance she also described helping her sister in terms of discrete skills. This suggested that her assumptions about the justification of knowing were that experiential knowledge could be applied directly from one situation to another. This in turn suggested a process analogous to the passive knower's unexamined acceptance of evidence.

The most frequent theme in the interview, however, was not the application of experiential knowledge to new situations but rather a process of trial and error to find a way forward. Take, for instance, Faith's account of how she came to be enrolled in her current non-nursing degree. *'I tried enrolling just for a course and then I got accepted into the [non-Nursing] degree.'* Apart from the slight sense of surprise that Faith conveyed about being accepted into the course, the other notable aspect of the story was that rather than applying for a specific course that specifically interested her, Faith opted for trialling a course that may turn out to interest her. Confirming this analysis, Faith said when I asked her if, after attending classes for three weeks, she thought the course would interest her, *'I don't know. I'll just try it out, I guess. Yeah.'* In other words, her approach to her education was haphazard.

A trial and error approach to knowledge, moreover, had characterised the previous six years of Faith's life. This seemed to be a source of dissatisfaction to her. Or, as she said, *'I didn't really expect me to still be studying now because ... it's been almost six years now since I last sat Year 12. And it does upset me, but I just have to go with the flow.'* In other words, with respect to coping with the demands of academia for herself and her sister she had accumulated piecemeal experiential knowledge about a series of steps to follow. But in general, she viewed life as a matter over which she had little control. In such a world, trial and error was Faith's default strategy for action because it was a means of accumulating experience to guide future action. Its limitations, however, were apparent in her frustration at her slow progress towards a degree.

The trial and error theme was repeated when I raised the more abstract question of searching for the truth. Initially, Faith responded by saying that she had not searched for the truth. But when I asked her whether she had been searching for something in the years since completing high school she replied, *'I haven't been searching. I've*

been trying, but not searching, yeah.' She then went on to discount the idea of searching for the truth saying, *'but I haven't been searching for the truth ... like, what is the truth and what's not the truth? I just been trying. Yeah. .. But for me, it's just trial and error, pretty much.'* In this manifesto of her personal approach to knowing, Faith also touched on the subject of the certainty of knowledge, *'like, what is the truth and what's not the truth?'* she says. It is to this signpost to personal epistemology that I now turn.

Certainty

In answer to her own question it appeared that Faith hesitated to express a generalised certainty about knowledge although in specific circumstances she asserted that she could be certain. She said, *'Like some areas, you can be certain that you're right and some areas you think you're right, but you're not.'* Having asserted the principle that there is no generalised certainty in life, she went on to give an example of where she could be certain based on her experience as a Diploma qualified nurse. She said, *'Well in nursing yes, because I work in the nursing field right now. So, I know, I've been exposed to all type of things ... So, I know what is right and what is wrong in terms of nursing.'* In other words, Faith exhibited the passive knower's assumption that knowledge is certain but she limited her certainty to the field of nursing where she could be certain due to her employment in the field.

When I asked her to consider the issue of the certainty of knowledge from the perspective of whether she could think of an opinion that was definitely wrong, she struggled to find an answer eventually saying, *'Definitely wrong? I don't know. (Pause). I don't know. (Pause). No, I don't know.'* Her difficulty in finding an answer may have reflected both her scepticism of the notion of generalised certainty unsupported by experience and also her diffidence about engaging with abstract knowledge.

Structure

As I have demonstrated, Faith's approach to the justification of knowing was trial and error to generate experience which she could then apply unexamined to new situations or to establish a basis for certainty. The assumptions about the structure of knowledge underlying this approach seemed to focus on the particulars rather than the general. This was demonstrated in the interview by Faith's habit of asking me to clarify my questions to make them more specific. Early in the interview, for instance, Faith countered my question as to what stood out for her over the previous five years by

asking, 'In terms of what?' When I re-phrased the question in terms of what had been important, she said, '*Well, umm, I haven't done really anything really important. Just mainly working and supporting my Mum. Yeah. And supporting my family back home.*' Apart from the fact that this response down played the importance of what she had been doing, it was interesting that she responded in terms of specifics – '*working and supporting my Mum.*' She went on to say, '*But I haven't touched, umm, on, you know, important things such as studying.*' That is, she did not answer by drawing the two aspects of her life – work and study – together but presented them as separate and conflicting. Compare this to Emilio who presented the same two factors as being important in his life but he spoke of them as having to be 'juggled' - implying a bigger picture within which he was balancing priorities.

Agency

As discussed, Faith is well practised at taking specific steps based on experience to achieve a narrow goal. She seemed to be following this practice when she said, '*I've decided not to work as crazy as I used to work back in the days. I have to focus on my study. And maybe get something out of the way.*' Her new determination to complete her current degree, however, was belied by her next remark that, '*And if I do this (degree) and not really like it, I'm just going to go into nursing and finish my nursing.*' In other words, her default position of going with the flow remained a strong underlying current in her personal epistemology and undermined her sense of agency.

5.2.1.3 Conclusion to Faith's interview report

Faith's interview confirmed that in 2014 she saw the world through a passive knowing lens albeit with some unanticipated features. In the interview, Faith demonstrated the passive knower's prevailing assumption that distant impersonal authority is the source of knowledge but her reliance on experiential knowledge as a guide to short term action was unexpected. Importantly, the interview also highlighted Faith's dependence on trial and error as a basis for engaging with the world and the apparent lack of an overarching structure within which she could reflect on experience and prioritise her actions. These characteristics infused the interview with a sense of limited agency except where previous experience was a guide to short term action. In summary, Faith's interview is consistent with many of the passive knower's assumptions about knowledge and knowing as they emerged from the writing tasks.

5.3 Experiential knowing

5.3.1 Interview 4: Pavathi

Pavathi's 2009 writing task compared the health care systems of Australia and her country of origin. In 2014, when she read her 2009 writing task, she indirectly confirmed that it was written on the basis of comparing her lived experience of the health care systems of the two countries. This is consistent with experiential knowing.

5.3.1.1 *Application of conceptual framework to 2014 writing task*

Pavathi's 2014 writing task responded to the statement 'Describe a positive or negative learning experience. Explain what you think makes effective learning.' She framed her 2014 writing task with an opening statement about the importance of learning, '*learning experieance is very important to develop a person.*' Pavathi then implicitly set up objective criteria for evaluating learning experiences by defining the terms '*positive*' and '*negative*.' Writing in the impersonal third person of a tentative or evaluative knower, she said, '*positive experieance will fullfill the life but negative experieance will give the person emotionaly drains.*' Then, more like an experiential knower, she drew on personal experience to give an example of a positive learning experience, '*In example studying in a positive environment with Full supported teachers and valuable peer groups help to achive my goals.*' In her concluding paragraph, Pavathi summarised the different outcomes that flow from the two vantage points from which learning experiences can be viewed, '*In conclusion; positive learning enviroment make student to achive high standed as well as negative environment lead them emotionaly, Anxiaty and depression.*' That is, Pavathi supplemented personal experience with impersonal observations and an implied process for judging whether a learning experience is positive or negative against objective criteria. This practice is more aligned to a tentative or evaluative knower than an experiential knower. The interview analysis will provide further insight into her personal epistemology.

5.3.1.2 *Application of the conceptual framework to analysis of interview*

Source

In the interview, Pavathi confirmed my analysis that her writing tasks signify her recognition of lived experience as a source of knowledge. Importantly, however, she also demonstrates that in 2014 the lived experience that she drew on was not only about her experience of the world but also about her experience of herself. That is,

early in the interview, Pavathi articulated the inner drivers of her education and career path. First, she identified her intrinsic interest in nursing which she expressed as, *'I love the subject.'* Her love of nursing contrasted with her high school studies in which *'my parents pushed me to the maths. So, I did very well in the maths, but it's, it's not my interest.'* Secondly, as well as enjoying nursing subjects, Pavathi is highly ambitious and motivated to advance her career and develop her skills; or as she put it, *'I always want something different to do. .. I don't want to be stuck in the same place. .. I want to upgrade my skills.'* Later she reflected more generally on her intrinsic outlook on life saying, *'It's my personality. .. if you want something to achieve [for] yourself .. go ahead, that's what I believe.'* That is, she was focussing here on self-knowledge rather than on her experience of education. This is in stark contrast to Faith whose learning from lived experience seemed to be focussed outwards on understanding her environment.

Interestingly, however, Pavathi also explicitly identified the way in which the development of her inner source of knowledge was inextricably entwined with the lived experience of the support of family and teachers. Consider, for instance, Pavathi's response when I asked her where her ideas on learning came from. She replied that *'you can achieve if somebody support you, aah, you can achieve what you want.'* In other words, achievement is not only about ambition, it is about support. And it was in the HSF course that she found the support to pursue her own personal goals, or as she said, *'the teachers are helping and it makes me go to my goal.'* Furthermore, she specifically identified emotional support from teachers as critical to her studies. She said, *'They give me, uh, energy and "you can do it!" and, uh, it is really helped me.'* Even more explicitly she attributed changes in herself to differences between teachers in her country of origin and teachers in Australia, *'because, uh, when I was studying back home I got bullied from the teachers. So, it is a bit different than here. So, it's made me different.'* That is, a supportive environment is critical to learning.

Fortunately for Pavathi, it was not only teachers, but her family who supported her emotionally and practically through many years of study. *'Always when I'm studying .. my parents or my husband's parents is coming and stay to look after the kids. So, my mother-in-law has helped me a lot .. she's the one who emotionally help me.'* Pavathi's husband also offered emotional support for her studies by assuring her that she had the ability to make the most of opportunities available to her in Australia. *'My husband is always behind me. .. So, he always told me, you've got the knowledge. You don't have to stay home, you can go and study. Here you've got lots of opportunities.'* The

common thread to these anecdotes about her teachers and her family is that the interrelationship between the individual and the emotionally supportive community is a key to the development of knowledge. This suggests a concept of knowing as a collaborative endeavour rather than the endeavour of isolated individuals interacting with their environment.

Structure

When I further considered Pavathi's interview, however, it became apparent that her assumptions about the structure of knowledge also assisted her to thrive within a supportive environment. That is, she seemed to assume that knowledge is interrelated rather than atomistic, that a framework is needed to interpret specific information. This understanding quickly enabled her, as a recently arrived immigrant, to grasp the possibilities afforded by the Australian education system despite the fact that, *'when I came here I have no idea how we can get, like, the pathway to go to the Nursing.'* Nevertheless, despite not having any prior experience of the concept of an educational pathway, Pavathi quickly grasped the concept supported by her assumption of the interrelatedness of knowledge. Compare this to Faith who after years of study still did not seem to think in terms of a pathway to her goals. Perhaps, her assumptions about the structure of knowledge as atomistic meant that she interpreted her experiences as illuminating particular situations rather than as part of a connected whole.

The concept of an educational pathway that may be indirect, or involve retracing one's steps, was a complete contrast to Pavathi's prior experience of a linear approach to education which had precluded her from pursuing a nursing education. She began by saying, *'Didn't achieve my goals back home. The problem .. I chose maths subjects. So, if I choose maths subjects, I can't go back to biology. That's the way the [country of origin] education system works.'* When she arrived in Australia, however, she was introduced to the concept of educational pathways by her English teachers: *'when I came here, I start English so ... the teachers are helping and guiding us, "this is the way, the pathway and if you can't go this pathway, you can link and go that way."* This was an approach that Pavathi's assumptions about the structure of knowledge enabled her to embrace. She said, *'So ... after that I realised that if I want I can do further studies.'* Armed with this realisation she enrolled in HSF where her understanding of pathways was reinforced and she wasted no time in seizing the opportunities open to her: *'So then I decided, OK, I did this one [HSF] so I have a bit of knowledge how its work and .. I applied for Division 1 Nursing ... I straightaway went to my degree.'* In

other words, she conceived of an educational pathway as a structure composed of interrelated steps which she could systematically pursue, or even leapfrog, to achieve her goal of becoming a nurse.

Justification

Pavathi's account of her educational journey in terms of a pathway demonstrated her assumptions not only about the structure of knowledge but also about the justification of knowing. That is, she clearly saw knowing as a process which unfolds step-by-step. This systematic process shaped her approach to acquiring knowledge in other areas of her life. Consider, for instance, how she recounted her process for researching her daughter's options for enrolling in an elite school: *'because I had no idea, about scholarship and all this stuff, so I Google and I did very big research and found all the schools and how to apply and stuff.'* Having systematically researched the scholarships and schools available to her daughter she *'applied for a scholarship at [private] College. .. and she got a 100% scholarship to that school.'* Apart from her pride in her daughter's achievements, Pavathi also communicated the methodical process that she had used to guide her daughter's education.

Interestingly, whilst a structured way of knowing underpinned Pavathi's interview there was also another element to Pavathi's justification of knowing – empathy. As she said, *'when, uh, I'm work in aged care, I thought, uh, it is easy to be a nurse, but with the empathy, it's not easy to do it.'* This is an abstract way of evaluating nursing practice that distinguished between the practical, technical skills in nursing and the quality of the relationships that the nurse engenders. Pavathi expressed it this way, *'sometimes the patient says, "Oh that grumpy nurse." I don't want that thing. I want to be really caring. Uh, that's the way I want to practice my nursing. That's I believe.'* In other words, her empathy for her patients became one of her criteria for assessing her nursing practice.

Even more interesting, however, was Pavathi's reflection on an incident in which empathy assisted her to understand a supervisor rather than a patient. The incident centred on the supervisor's insistence that Pavathi change her way of communicating at work. Initially, Pavathi was critical of the supervisor but revised her opinion when she thought about the incident from the supervisor's point of view. She said, *'First I thought it's bad way ... she's (pause) coming and taking out of me and stuff.'* But then Pavathi revised her opinion saying, *'after she told me, "No, I know you're a very nice and very shy person but ... I want you to ... engage with the other team members. That's why I help you!"'* Pavathi then thought about the situation from the supervisor's

point of view and said, *'Then after, I thought, 'Uh, that's good!'* Pavathi's ability to stand in the shoes of her supervisor assisted her to take on board the supervisor's remarks and meet the expectations of the workplace. In other words, she was using empathy to assist her to evaluate a situation and decide on a clear cut 'right' answer rather than using empathy to arrive at a compromise or inclusive decision.

Finally there was also evidence in the interview that Pavathi's valuing of the abstract quality of empathy in her professional life was echoed in her concern for her extended family. She said, *'Still I'm protecting my parents, still my grandfather back home. .. I know that I can't go and take care of them, but at least I can, uh, help them.'* That is, Pavathi's sense of empathy was a guide to her judgments about how to act in different domains of her life.

Certainty

In the interview, Pavathi also articulated her assumptions about the certainty of knowledge. She began by acknowledging periods of uncertainty in decision-making by saying, *'sometimes I'm struggling is that right decision or not?'* That is, she started from the assumption of certainty – that there is a right way. Her strategy for finding the right way, however, centred on exploratory action. As she said, *'[whether] it's right or wrong we have to go through it. If it is wrong way, we have find the right way to do it.'* In other words, when it came to action the dualism between right and wrong was replaced by a more flexible notion that a wrong decision can be a step in the right direction. Or as she said, *'So, if you don't know the wrong way so, it's a bit hard to find the right way.'* When I sought clarification that she was saying that sometimes it's better to start even if you're wrong she said, *'Even if you're wrong, yes. Because it makes you get some ideas. It's not gonna work this way, so...'* Here Pavathi clearly articulated the paradox that everything is not what it seems – missteps can become stepping stones. The approach is both non-dualistic and purposive – a contrast to the randomness of Faith's approach to trial and error.

Agency

Embedded in Pavathi's anecdotes about her educational journey there were also insights into her sense of agency. For example, she told of how she rose to the challenge of complying with the expectations of professional communication in a hospital setting despite the contrast with the communication style instilled in her as a child. She began her story by explaining, *'I did one of my, uh, clinical placement in*

[names a hospital] Hospital Emergency Department. Here she encountered a problem because, 'My preceptor (?) is little bit upset because she said, 'working in the emergency you mustn't be quiet, you need to talk and talk, talk, talk. Otherwise, I'm going to fail your placement.' The supervisor's criticism prompted intense reflection on Pavathi's part because failing the third year placement would have prevented Pavathi from graduating.

So, as she said, *'I came home and thought myself, "No, I'm not gonna give her win." So, I'm gonna change myself. So, from next week .., from tomorrow, I'm gonna be different person. I will talk with everybody.'* The extent of the challenge to Pavathi's ingrained communication style was that *'the way I grown up, um, we not just go and straightaway talk. We are respecting and letting them talk.'* Nevertheless, Pavathi did rise to this challenge as she recounted in her methodical way, *'Next day ... I took my seven patients, I did everything, and I talk with the doctors and I did everything.'* This dramatic change was immediately noticed by the supervisor who said *'you completely different.'* To which Pavathi triumphantly replied, *'Yes, I want, I can change!'* That is, Pavathi was not immobilised by a sense of uncertainty about what she should do; rather, she analysed the implications of not complying with her supervisor's expectations and promptly adopted the required communication style. In making this fundamental shift she displayed an intense sense of certainty that she was making the right decision and a great sense of agency at her ability to make the required change.

5.3.1.3 Conclusion to Pavathi's interview report

In the interview, Pavathi confirmed my analysis that her writing tasks signify her recognition of personal experience as a source of knowledge. That is, the interview highlights how Pavathi's personal epistemology emerged in the context of her family and life experiences as well as in the context of academic life. Importantly, however, the interview also demonstrates that in 2014 the personal experience that she drew on was not only about her experience of the world but also about her experience of herself.

Another striking feature of the interview was Pavathi's sense of agency that was communicated in several ways. Firstly, Pavathi explicitly articulated the way in which the development of her inner source of knowledge was inextricably entwined with the support of family and teachers. Her sense of agency was amplified by her assumptions about the structure of knowledge that enabled her to grasp the concept of an educational pathway as a structure composed of discrete steps which she could

systematically pursue to achieve her goal of becoming a nurse. Her sense of agency was further amplified by her approach to the justification of knowing that enabled her to stand in the shoes of her supervisor to reflect critically on the incident involving the supervisor's criticism of her workplace communication.

Finally, non-dualistic assumptions about right and wrong enabled Pavathi to articulate an explicit notion that finding one's way could involve missteps as well as stepping stones and that both experiences could be helpful. In summary, whilst Pavathi demonstrated strong elements of the experiential knower's sense of agency and advocacy on behalf of self, she also demonstrated highly developed procedures for reflecting on experience and for implementing a series of steps to achieve a goal. In other words her way of knowing, although experiential, was far more complex than regarding knowledge as the 'static residue of direct experience' (Clinchy 2000, p. 30). She reflected on her experience in an instrumental way to achieve her ends. In this way she demonstrated that she drew on both experiential and evaluative knowing.

5.4 Tentative (Inclusive) knowing

5.4.1 Interview 5: Hurriyet

Hurriyet's 2009 writing task responded to a topic about social change in which she compared past and present and considered multiple points of view before offering her opinion of a possible compromise. In 2014, when she read her 2009 writing task, she confirmed my analysis that she was concerned with weighing up the positives and negatives of technology. This is consistent with the non-dualistic vantage point of tentative knowing.

5.4.1.1 Application of conceptual framework to 2014 writing task

Hurriyet's 2014 writing task responded to the topic: 'Women should stay at home and look after the children while their husbands go out to work.' She opened her writing task with a clearly articulated personal opinion, '*I strongly disagree with women staying at home and look after children while their husbands go out to work.*' This compares with what I described as the diffident opinions in 2009 when she was grappling with multiple points of view but did not reach a definitive conclusion. Next she referred to her personal experience to conjure up a dualistic world in which gender roles are sharply delineated. She said, '*I came from a country where women stay home and the husband works.*' Immediately, however, she signalled that she did not see the world in dualistic terms. Instead she outlined an alternative view point based on mutuality

rather than the dualism of distinct gender roles. She said, *'I believe if both women and men can share the house work and both are educate themselves and get employeed, their children can have a better life.'* Here, there is an implied process for judging alternatives that draws on a non-dualistic conception of gender roles and the assumption that knowledge is flexible and capable of evolving. These are characteristics of the tentative knower.

In summary, there are common elements to the 2009 and 2014 writing tasks in that they both involve comparing multiple points of view from a non-dualistic perspective. What differs in 2014, however, is the increased certainty of Hurriyet's opinions and the explicit reference to her own experience as a source of knowledge. The interview analysis will provide further insight into her personal epistemology.

5.4.1.2 Application of the conceptual framework to analysis of interview

Source

In the interview Hurriyet, like Pavathi, demonstrated that in 2014 her assumptions about the source of knowledge included the assumption that self-knowledge as well as lived experience is an important resource for understanding. In fact, Hurriyet's self-knowledge is a driving force in her story. As she said, *'I always wanted to be a nurse. I had that passion to be a nurse.'* She further expanded on the role of self-knowledge as a source of inner strength in response to my question as to what stood out for her in the years 2009 to 2014. She said, *'Well, I have to go through a tough time. Like, I knew, deep down I knew I could do it. But I just needed to be strong.'* In other words, Hurriyet's self-knowledge supported her resolve to complete her studies in difficult circumstances.

In addition to self-knowledge, Hurriyet drew on lived experience of working in aged care as well as the impersonal knowledge communicated through her formal education for understanding. In answer to my question, for instance, as to what experiences had shaped the way she sees things she replied, *'I gained a lot of knowledge, from studying, from becoming a personal care worker.'* Expanding on the importance of multiple sources of knowledge, she said that in order for a person to be an expert, *'they have to have enough knowledge, enough experience and skills ... they have to do lots of research, they have to investigate.'* That is, she recognised the importance of impersonal knowledge as well as lived experience in the development of expertise.

Hurriyet, like Pavathi, however, also recognised that there is knowledge to be read from relationships. She said in relation to her experience as a personal care worker, *'So, I developed a lot of skills, communication skills, helping people.'* Moreover, she emphasised that the ability to read and respond to the emotional needs of others is a skill to be valued. She said *'So, I'm glad to be a nurse...So, when you make a change in people's life, that's something different, you'd be happy, you'd be satisfied with what you do.'* That is, relationships and the knowledge they embody are a separate source of knowledge to that of academia or work experience as a basis for the development of professional skills.

Yet another source of knowledge for Hurriyet is prayer. She said, *'if I wanted anything, or if I wish for something to happen, I sort of pray. And I believe on praying – asking God for it.'* Hurriyet went on to explain that prayer can be a source of knowledge when she's seeking answers that her siblings cannot provide. She said, *'When it's experience, I can ask my elder brothers and sisters because they have more knowledge and more experience than me.'* There are, however, circumstances where, *'If it's something that I wanted from God, I can just ask, I can pray and ask God.'* Here, Hurriyet not only spoke of prayer as a source of knowledge but she also demonstrated an abstract dimension to her personal epistemology that is further explored in relation to certainty.

Justification

As regards Hurriyet's assumption about the justification of knowing, lived experience provided the context in which she demonstrated her emergent procedures for judgment. For instance, for Hurriyet teachers are a diverse group, or as she said, *'Some of the teachers were very helpful.'* Others, however, made an a priori and negative assessment of her: *'However, because English wasn't my first language some of them would be, like, "Oh, nursing is not for you." Sometimes they would put us down.'* In other words, Hurriyet critically assessed her teachers whilst recognising differences among them. Her resilience in the face of this diversity of teachers appeared to be related to the fact that she drew on her tendency to see both sides of a situation for support in challenging situations. Or, as she put it, *'you'd see the other teachers and they would give you support and you'd be like, "Oh yeah, see there's always nice people and bad people."'* That is, Hurriyet allowed for complexity rather than fixed alternatives.

Lived experience, rather than academic or impersonal knowledge, was also the context in which Hurriyet honed her procedures for evaluating information by making use of comparison as a tool for understanding. She said, *'from personal experience being from back home in [my home country] and Australia you see what's going on in your environment, you see what's going on between the two different countries and you're actually comparing them.'* The explicit enunciation of comparison as an analytic tool continued when she discussed the issue of house work and how attitudes on the subject have changed over time. As she said, *'I can talk about how things have changed from back in the days and now. How ... we share the house help. This is just based in Australia though.'* In other words, she suggested a comparison between Australia today and Australia in the past. Moreover, the power of the comparative process for Hurriyet's thinking has already been evidenced by the opening sentence of her 2014 writing task in which she firmly rejected the notion of women's role being limited to the home.

In addition to invoking comparison as a basis for new understanding in regards to social issues, Hurriyet also referred to using a strategy of comparing opinions to enhance her process of day-to-day decision-making. First she outlined how she drew on the views of her family. She said, *'I think if I want to make a decision, I would ask my brothers and sisters because they've been through a lot. So in making decisions, I'll be wanting your – their word.'* The opinions of her siblings, however, are not the only source of knowledge. Rather, as she said, *'But at the end, (pause), I'm just asking their opinion. Like, I'll also compare what I think, what they think and then do the best decision. Not based on what they said.'* That is, Hurriyet outlined a judgment process that involved seeking multiple informed opinions, comparing them against her own views and then making a decision. This is a more developed judgment process than she demonstrated in 2009 when she identified multiple points of view but did not clearly enunciate her own position.

Structure

Turning now to Hurriyet's assumptions about the structure of knowledge, they included assumptions about knowledge as interrelated rather than atomistic. Interestingly, these assumptions emerged not in an account of her experience but in an account of her teacher's experience. She began the story this way, *'One day she decided that she can be a better person. So she ... did a Certificate III in Aged Care. And she then sort of, like, got employed and started to become a better person.'* Significantly then,

Hurriyet began her anecdote by framing it not as a series of isolated steps but as part of a bigger picture – a journey to being a better person. Then she continued the anecdote as a step-by-step account of interspersing education and employment in a single trajectory to become an educator. Hurriyet said, *'And ... she actually did her Certificate IV in Nursing .. And started working as a Certificate IV ... She did her degree ... and she started working and she ... specialised ... on wounds, on gynaecology ... and then ... she decided to become an educator.'* In other words, Hurriyet conceived of her teacher's educational journey as a structure composed of discrete steps which she pursued systematically to achieve her goal of becoming a nurse-educator and a better person.

Certainty

Hurriyet's assumptions about certainty are interesting because her sense of certainty was not the product of uncritical acceptance of social practices. That is, for Hurriyet the process of reflecting on situations contributed to her sense of certainty. Initially, for instance, when discussing the role of women she qualified her statement by saying, *'it is just my view,'* but, very quickly she became more emphatic saying in relation to her country of origin, *'Womans stay at home. And men go work for the bread. And I strongly disagree, 'cause woman's not being educated.'* That is, the certainty of her opinion was related to her analysis of the results of strict gender differentiation. Not only did she critique social practices in her country of origin, however, but she also aspired to change those practices. She said, *'And my wish is, like, to become an educator and to go back home and educate those people.'* That is, she demonstrated a sense of agency that was related to the certainty that she derived from her analysis of different life experiences. This was a highlight of Hurriyet's interview and went beyond mere analysis of social relations to signal a determination to act for change.

Structure: abstract or concrete knowledge

The complexity of Hurriyet's personal epistemology was also apparent in her assumption that knowledge can be abstract and entail the uncertainty of the search for the unknown. This quality in Hurriyet's epistemology emerged not in a story of her own experience but in stories of other people. One of those stories began when I asked Hurriyet if you could search for something if you were not sure what you were searching for. She said, *'Yeah, you can still search. (Pause) You can be lost whilst searching something. You can be disappointed sometimes. And sometimes ... you*

mightn't find your ... umm, destination.' That is, Hurriyet articulated her awareness of uncertainty amid multiple possibilities at an abstract level.

She then went on to recount a story that translated the abstract notion of 'searching' into a hard reality. She began by saying, *'There's a lot of people searching for peace as well.'* Then becoming more concrete she continued, *'Like for example, there's a lot of people that escapes from my country, then they go to [a neighbouring country], and then they try to go to Italy.'* Then returning to the nature of their searching she said, *'Those people are trying to search for peace.'* But again she returns to the hard reality, *'But some of them are lost, 'cause you probably heard of the Lampedusa incident. Yeah. So they're trying to search for peace. But they can't get it.'* Here, Hurriyet moves seamlessly from the abstract to the concrete whilst articulating the uncertainty of life. But, as we have already seen, this does not preclude her from a sense of certainty in relation to particular issues as a result of observation and analysis.

Agency

Whilst Hurriyet conveyed a sense of the tragedy of many asylum seekers, she nevertheless retained a sense of optimism about the possibilities of a different future. Her optimism was connected to the possibilities for collective action. Speaking about her dreams for making a difference in her country of origin she said, *'So, my view and others, like, we can get together ... we can go and educate womens.'* She went on to express a sense of agency in collaborative action saying, *'I believe that we can make change. Like, if we cooperate with the womans working towards that back home. So, yeah!'* Here again, we see Hurriyet's capacity for embracing a sense of certainty rooted in her analysis of women's roles in her country of origin. Her sense of agency is not dimmed by her earlier recognition of the possibility of failure in pursuit of one's dreams.

5.4.1.3 Conclusion to Hurriyet's interview report

Hurriyet's interview confirms my analysis based on her 2014 writing task that in 2014 she can clearly articulate firm opinions developed in the context of personal experience. The interview, however, revealed the complexity of her epistemological lens in a way not shown by the 2014 writing task. Importantly, the interview highlighted Hurriyet's assumption that self-knowledge, relationships and prayer can be sources of knowledge. As regards the justification of knowing she relied heavily on comparison as a tool for understanding her experiences and she allowed for complexity rather than

fixed alternatives when reflecting on her experience. For instance, she summed up her experience of teachers in terms of there always being *'nice people and bad people'* and she suggested that gender roles could involve sharing *'the house help'* rather than being mutually exclusive. Her discussion of educational pathways seemed to be underpinned by an assumption that knowledge is interrelated rather than atomistic.

An aspect of her personal epistemology that was not anticipated by the conceptual framework, however, was the fact that her agency was amplified by a concept of knowledge as collaborative. That is, the possibility of collaborative action provided her with a sense of how she could share the insights she had gained from comparing her divergent lived experiences. In other words, whilst Hurriyet recognised that success could not be guaranteed when faced with political realities, she nevertheless retained a sense of optimism about the future connected to her belief in the possibility of collective action.

5.5 Evaluative knowing

5.5.1 Interview report 6: Liz

Liz's 2009 writing task responded to the topic about women's role. In 2014, when she read her 2009 writing task, she indirectly confirmed my contention that her earlier opinions were not deeply rooted in her own experience. This was consistent with my argument that in 2009 she was an emerging evaluative knower rather than an individualistic knower.

5.5.1.1 Application of conceptual framework to 2014 writing task

Liz's 2014 writing task again responded to the topic: 'Women should stay at home and look after the children while their husbands go out to work.' She opened her writing task with a carefully modulated opinion consistent with an evaluative knower, *'To some extent I agree with this statement.'* Then, she outlined two different vantage points to be considered. Firstly, she said, *'I believe mothers should stay home for a period of time and care for their children.'* Then she juxtaposed this with another point of view, saying, *"However, for most this "stay at home mum" role is not going to be a stimulating life style for 18 years or so.'* That is, although she wrote in the first person she adopted an even handed approach rather than the tone of an advocate for an opinion. Drawing on her experience of observing her sister's situation, however, she went on to express a much more definite opinion. She said, *'As the aunt of two beautiful kids I have seen how being a perminant stay at home mum can becom a*

negative life style choice for some.’ She then supported this observation by comparing two periods in her sister’s life. These were, firstly, as a *‘stay at home mum,’* then when she combined parenting and tertiary study. According to Liz, her sister went from *‘depressed and tired to motivated and excited.’* Here, Liz was engaging in the hallmark evaluative process of using an explicit comparison to evaluate evidence to support a conclusion. Unlike an evaluative knower as described in Chapter 4, however, Liz situated her evaluative procedure in her observation of her sister’s lived experience, rather than in impersonal knowledge. In her concluding remarks, she generalised her sister’s experience to conclude that, *‘mothers have as much a place in the work force and in a career as they do at home.’* Then she re-phrased her conclusion in the first person saying, *‘I would one day love to stay at home with my children, but I feel for my health and sanity I will return to work.’* This contextualised sense of certainty is characteristic of an evaluative knower but infused by her sister’s experience.

5.5.1.2 Application of the conceptual framework to analysis of interview

Source

In the interview Liz, like Hurriyet and Pavathi, demonstrated that in 2014 she assumed that self-knowledge and personal experience are sources of knowledge. This was illustrated when Liz recounted a u-turn in her educational journey. Immediately after completing secondary school, Liz had commenced a vocational (TAFE) diploma in a non-nursing area but half way through the qualification she withdrew in order to pursue nursing studies. In making this change Liz was responding to a passion for nursing, or as she put it, *‘I just had a desire to do it.’* Her passion, moreover, was reinforced by a sense of her inherent capacity to study in this area. As she said, *‘I’ve always had that sort of science mind, like, I did physics and chem in high school.’* The emergence of Liz’s sense of inner knowing is crucial to Liz’s unfolding career and life direction which she expressed as, *‘I’m just a lot more comfortable with where I am, not worried about where I’m going. Like, I’m kind of, where I want to be for now.’* Here’s Liz’s comments are a testament to her inner knowing but also to her sense of a structure, or big picture – a point developed in the section on structure.

Liz’s account of her switch into nursing closely parallels Meshell’s account of her switch out of nursing and into a totally unrelated area. Both young women couched their change of direction in terms of their passion and inherent capacities and interests. For both young women this sense of inner knowing enriched their personal epistemology as demonstrated in their 2014 writing tasks and interviews.

As regards personal experience as a source of knowledge, Liz affirmed its importance when, commenting on her sister's experience, she said, *'seeing it, sort of, first hand (pause) and umm, you know, watching the change that comes with, umm, you know, mixing those two worlds together... So, yes, definitely personal experience.'* It was not only in family life, however, that Liz drew on personal experience, but also in a work setting where experience took the form of hands-on learning. She said, *'I find hands-on-learning, even though I'm like, shaking because I'm actually doing it, I get that sequencing and I get, umm, less clumsy with my, you know, sterile field and things like that.'* Then emphasising the importance of hands-on learning she reflected that, *'a lot of placements made me wish that there were more.'* That is, in work and family life personal experience is a source of knowledge.

Liz, however, also made clear that she drew on different sources of knowledge depending on the circumstances: *'In general,'* she says, *'it would depend on the situation.'* Consider, for instance, the wide variety of external sources of knowledge that she referred to in the following account of searching for information in her professional life: *'Well, at work most of my knowledge, if I don't know something, I'm gonna go to, like, the [hospital] Pharmacopeia for my drugs, and then, umm, the administration guidelines for how to mix up my drugs, how to deliver them, umm, and then there's .. our policies and procedures.'* That is, her first port-of-call is work-based reference materials followed by general references. Or, as she said, *'I've been able to go into Google Scholar ... and I think even now I sometimes go to the text books that I had.'* Then returning to work-based resources she concluded, *'Umm, but other than that, I'd probably say, like, my work colleagues ... or umm .. I'm lucky because, the ward I'm on has a lot of clinical nurse specialists and then, you know on top of that, I've got my educators.'* ..The plethora of sources of knowledge, however, did not unsettle Liz. Rather, she seemed to select amongst them in any given situation to arrive at a course of action.

Structure

Liz's facility for managing multiple information sources was underpinned by her new found sense of an integrated study and employment pathway. She commented, for instance, that *'I had, umm, not a lot of .., like, vision of where I was going in the beginning of 2009.'* This, however, changed when *'I started studying something that ... had some structure for me.'* Here, her explicit reference to structure seemed to mirror an implicit assumption that the structure of knowledge is interrelated rather than

atomistic. In addition to underpinning Liz's sense of a coherent career path, an emerging sense of structure also contributed to Liz's increased ability to prioritise. As she said, *'In high school, I was always the kid who was, like, three days late [but in first year university] ... I did prioritise a lot more. A majority of things were on time, were done to a standard that I was happy with.'* Moreover, Liz linked her new ability to prioritise to increased effectiveness as a learner in her graduate year saying, *'I think I'm ... a slightly more effective learner if anything, so, I've sort of figured out how to prioritise the information that's coming to me because there's so much coming to me in my 'grad' year.'* The ability to prioritise, however, is related to having a framework within which to prioritise and in this sense is a practical application of Liz's conception of knowledge as having an overarching theme that orders the parts.

Justification

Like Hurriyet, Liz's approach to the justification of knowledge was often based on observation and comparison. Liz demonstrated this in the context of her perception of family life, her academic studies, and in work-based settings. She explained, for instance, how her views about child rearing had developed through a process of observation and comparison. She said, *'I feel like I'm very opinionated parenting wise because I've sort of, I don't know, I've seen a lot of good parenting and a lot of bad parenting.'* As regards her academic studies, she applied the process of comparison to essay writing, saying *'I'd find a bunch of slightly different research papers on the one topic. And, hopefully, be able to find the vein that they were all sort of similar in.'* She would also take account of points of difference, however, saying, *'when you're discussing a topic in an essay, you do have sometimes conflicting, umm, papers .. sometimes it gives you fuel to argue.'* Next she outlined an essay format that demonstrated that she has taken a variety of views into consideration beginning with a phrase such as *'Some research agrees that ... whereas this research says ..'* But Liz is not content to simply rehearse the arguments of others because *'realistically, it does get you down to the point when, that last, umm (pause) end result that some one's gotten from a study, "is what it is" ... So, that's the truth, I guess.'* In other words, after a process of comparison, empirical results are ultimately the basis on which Liz arrives at a conclusion about medical research.

In practice settings too, Liz used a comparative method to guide her decision-making. Sometimes she made comparisons with her earlier practice, saying, *'I sort of think about what I did on my placement, or what I did with my last patient. 'Cause this is the*

way that it worked effectively and, realistically, it's slightly different but, overall, it's the same treatment.' On other occasions, she sought out multiple opinions from her colleagues about a particular skill or procedure before practising it for herself. She said, *'So, you know, I'm gonna, sort of ask this person, that person and that person and then go practice the skill or practice the procedure.'* What is guiding Liz's comparisons, however, is a pragmatic framework for decision-making flagged in her approach to essay writing. That is, she said in relation to her own skill development, *'then go practice the skill or practice the procedure and then look at the results. So, results is probably, you know, where you're going to find out if something is correct.'* This pragmatic framework for the evaluation of her performance of practical skills and nursing procedures is analogous to the way that she relied on empirical results in an academic setting to evaluate the arguments of multiple research papers.

Certainty

Liz's facility for comparing diverse knowledge sources through a strong sense of structure enabled her to experience a great sense of contextual certainty in a world of multiple experts and changing nursing practice. Moreover, Liz's sense of certainty could encompass multiple sources of expertise because she applied a procedure of identifying the context in which expertise has been developed and therefore the range of contexts in which it applied. Consider, for instance, Liz's views about what constitutes an expert. She began by elucidating a general principle for expertise, *'When something is ingrained or it's second nature.'* In the case of a consultant's knowledge she said, *'This is their life, they've been doing it for thirty something years. They do surgeries for this every day. They see these symptoms every day. They are, umm, expert.'* Liz's enunciation of her confidence in medical consultants, however, does not preclude her recognition of other experts in the hospital situation. She says, *'You could have a patient who's an expert in their case. You know, they've done the research on what they've got, they know what it feels like.'* In other words, it appeared that Liz allowed for 'two very different "experts"' – expertise based on extensive experience across cases, or case-specific expertise based on personal experience. Moreover, the list of experts included not only consultants and patients but also *'the parents as well, especially in paediatrics.'* She goes on to explain that as a paediatric nurse, *'you pretty much ask the parent first ... and you'll actually get some really, umm, effective and important information out of them that you might not get out of a doctor, for that patient.'* Here again, Liz seemed to distinguish between the general expertise of the doctor and the parents' expertise in their child's particular case.

Moreover, Liz's flexibility in regard to the sources of certainty about nursing knowledge also extended to her recognition that current practice may be rejected in the future. She said, *'I think especially with (pause), umm, continued research ... best-practice does change. (Pause) In nursing ... everything is really gonna change a lot.'* Nevertheless, she did not suggest that the inevitability of change is a problem, rather she said, *'Everything gonna keep changing and I'm always gonna have to learn. Which is really good.'* That is, equipped with assumptions about the changing nature of knowledge and with processes for the justification of knowing, the inevitability of change in nursing practice was welcomed by Liz.

Structure: abstract or concrete knowledge

The final dimension of Liz's personal epistemology is the importance that she attributes to concrete, practical knowledge. When I asked her for an example of something that she had learnt from an expert, for instance, Liz spoke about learning how to administer oxygen from a paediatric educator. She said, *'She's just going through the machine and showing me how to do it.'* Most importantly, in Liz's view, she was demonstrating how to use the machine in the practical context of specific patients and their needs. Liz went on to say, *'She knows that kids under two get this much oxygen, kids over two get this much. When you've got this much flow you need to calculate this many litres, and that kind of thing.'* Moreover, from Liz's point of view, the value of this educator was not just her technical expertise in the oxygen needs of specific patients but, *'There's a lot of things that that educator in particular can really expand on ... the whys and then the repercussions of what you're doing. And what to look for once you've, sort of, started a treatment.'* In other words, Liz appreciated the way the educator located her teaching in the practical context of specific patients, their needs and how they responded to treatment.

Liz's engagement with concrete practical knowledge made an interesting comparison with how little attention she paid to the topic of meeting patients' emotional needs. The closest that Liz came to acknowledging this dimension of nursing was to say, *'I've got the whole people thing down, like, I'm happy to talk to the patients and work with difficult people or families and things like that.'* She then quickly returned to practicalities, *'But, when it comes down to the clinical part of things, that's where I need a little bit more discussion and a little bit more hands-on.'* Liz's preoccupation with practical skills is comparable to Meshell's focus on getting the job done in her professional life. Meshell summed up her professional role as, *'So, we just mange the*

project ... we're mainly in the execution to make sure that everything is on time, not delayed, you know, just to do the impossible, basically.' Both of these young women exuded a sense of practicality and enthusiasm for getting on with the job. These qualities, however, were supplemented by strong evaluative skills that they used to review multiple sources of knowledge, including theoretical knowledge, thereby supporting my categorisation of them as evaluative knowers.

5.5.1.3 Conclusion to Liz's interview report

Liz's interview confirmed that in 2014 she grounded her judgment process by drawing on personal experience. This is consistent with the interpretation of the 2014 writing task as the work of an evaluative knower infused by personal experience. Liz's interview, and that of Meshell, however, shed more light on the complexity of their epistemological lenses than their 2014 writing tasks. In the interviews they described experiences in which they had felt a deep conviction about their innate interests and abilities that subsequently guided their life and career choices. In both cases, they also described systematic processes for making decisions in a practical context or the step by step pursuit of a pathway or goal. The combination of self-knowledge and a process for implementing insights that derived from self-knowledge or personal experience contributed to a strong sense of agency and certainty. Liz and Meshell, however, did not only draw on their internal resources for knowledge – they also sought and received knowledge and support from multiple external sources. Liz and Meshell also conveyed a conception of knowledge as holistic encompassing specific details and inconsistencies or contradictions within a broad framework.

5.5.2 Interview 7: Assunta

Assunta's 2009 writing task responded to the question 'How has your day been so far?' It conveyed a sense of the significance of her day and the ability to take the views of others into account and to articulate a strategy for achieving a practical goal. In 2014 when she read her 2009 writing task she confirmed the significance of her enrolment in HSF and critiqued her 2009 writing task for not addressing 'ideas.'

5.5.2.1 Application of conceptual framework to 2014 writing task

In 2014, Assunta displayed her new found ability to engage with ideas by responding to the topic comparing the health care systems of Australia and another country. In her response she again displayed the characteristics of an evaluative knower that she had displayed in her 2009 writing task. She began her 2014 response in the third person

by saying, *'Australia is a fine country.'* She then defined what she meant by the term *'fine'*, saying, *'Meaning in terms of Employment, Education, transport particularly the health system.'* In other words, she set out the basis of her evaluation of Australia as *'fine.'* She then acknowledged that from some of these vantage points, Australia may not score very highly compared to other countries. She said, *'There are countries whose transporting system are better than Australia, Educating system more advance than Australia.'* Having taken these vantage points into consideration, however, she concluded that in relation to health care, Australia is preeminent. She said, *'But I don't think there will be no country where health care system is better than Australia.'*

Having set the stage for her argument she then narrowed her topic to a direct comparison of the health care systems of Australia and her country of origin. She said, *'In Australia the government put separate budget for health care system. But in [country of origin] the government did not have a budget for the civilian, meaning no public hospital where you pay a lower fees for doctors visit.'* That is, Assunta proposed that at a policy level, government funding is a criterion for evaluating health care systems and spelt out the implications of the policy for individuals. This is consistent with evaluative knowing.

5.5.2.2 Application of the conceptual framework to analysis of interview

Source

When we first met Assunta she provided a first person account of her day which I argued was consistent with those evaluative knowers who develop their evaluative skills in the context of personal experience. In the interview, Assunta confirmed the importance of lived experience in informing her personal epistemology when she gave a vivid account of medical conditions in her country of origin: *'the town where I come from there's no clinic, there's no hospital, nothing. So, when a women gives birth and lose blood, there's no blood to transfuse or to compensate anything. So, people dies. Just die. Without any illness.'* In view of the passion with which she had described the medical situation in her country of origin I asked whether her experience had impacted on her desire to be a nurse. Her response was emphatic, *'Yes, that is the huge one, that motivate my whole family. .. to go in the health industry. Because of the experience that we've got. Like, you see people dying in front of you, just because (pause), they bleed.'* Assunta, then, is explicit in identifying personal experience as crucial to the formation of her aspiration to become a nurse.

But the interview also demonstrated that Assunta drew on multiple sources of knowledge. Take, for instance, Assunta's account of arriving in a new country where she had no personal experience to guide her. She said, *We migrated from [a transit country] like, 2007 ... So, doing only a year and a half VCE is not enough for me so I don't know what the hell is going on.*' Faced with this confusion, Assunta turned for advice to an external source of knowledge, a support worker with a welfare organisation. Or, as she said, *'So, umm, the lady named Gail from [non-government organisation] recommend this course [HSF].'* More generally during the interview Assunta gave a spirited defence of the concept of multiple sources of knowledge. She started by saying that her knowledge about health care came from *'Personal experience, obviously (pause) because ... if you don't experience it, you don't know.'* When I pursued the issue of her sources of knowledge in general, however, she added, *'Different source. ... the real knowledge, I think, you have to experience it as well as you have to learn. You have to read (pause). You have to hear from the person who experienced it, as well as the expert. ... Knowledge ... can be gained from heaps of source.'* That is, Assunta articulated a complex notion of the sources of knowledge that began to suggest how knowledge sources interact.

This theme was developed in her discussion of the HSF course where she described the emergence of knowledge through the interaction of student and teacher. Assunta described this process as, *'how the teacher teach us. Like, just like if we don't understand, they just (pause) come to us ... they explain it to us.'* Later, she returned to the importance of the teachers and their relationship with students, saying *'the relationship and the teacher is the positive that I have, ah, positive experience with Gateway to Nursing.'* In other words, Assunta drew on the expertise of others through a process of interactive learning with supportive teachers. These sources of knowledge supplemented personal experience which she summed up by saying, *'I would like to thank [name of university], especially Gateway to Nursing program coordinator [and] the teachers ... because the way they treat students and the communication, the relationship. It's, it's the best experience that I've ever had.'* Here, Assunta, like Pavathi and Hurriyet, emphasised the relational and collective aspect of the sources of knowledge.

Justification

As regards the justifications of knowing, Assunta drew heavily on comparison as an evaluative procedure. For example when I asked her what stood out for her about the

period 2009 – 2014 she said, *'How Australian education system works ... where I come from it's about learning by heart. You just make a note and you go home and learn by heart. .. But, here it's different ... you have to understand.'* Then when speaking about her own education pathway she again drew on comparison, saying of the HSF course, *'it was a good experience - compared to university that I'm doing now.'* Reflecting on a specific aspect of her academic skill development she also drew a comparison, saying, *'I've improved a lot, like, I look back all my essays, er, that I wrote from Gateway Nursing as well as, umm, with my Certificate IV Nursing. So, looking back, like, Oh, I improve!'* That is, comparison was a tool that she used to understand the Australian approach to education, to evaluate her learning and to engender a sense of agency.

Using comparison as a tool for understanding, however, did not lead Assunta to advocate for trusting one's instincts. Instead she advocated for a systematic approach to understanding, saying, *'you have to read, you have to understand, you have to swallow everything and interpret it by yourself and then that's how you learn.'* Later in the interview, she juxtaposed her systematic approach to knowledge with the approach of those who advocated trusting one's gut. She said, *'some people, also used to say, 'Believe your guts.' Like, instinct. .. For me, it's hard.'* This hesitation about relying on instinct was consistent with her earlier response to a query from me as to whether you learn by taking risks. She acknowledged, *'that's true but if there is a manual, I would prefer to read the manual first.'* That is, objective sources of knowledge, if available, should be consulted.

Her process for acquiring knowledge also recognised an authentication process which, in the case of nursing knowledge, is confirmed by the issuing of qualifications. She said, *'If you sit there and only experience or watch people, you learn (pause) 30%. But, (pause) if you don't read the book or if you don't learn it and you haven't, I'll say, have a qualification, the knowledge that you have is not fact.'* As became apparent later in the interview, the issue of how facts are established is crucial for Assunta both in her personal and professional life.

Certainty

In non-academic areas of life, for example, Assunta's concern with evidence was as passionate as it was with respect to professional knowledge. This emerged in her account of an incident in her home country that affected her profoundly. She began by distinguishing between opinion and fact. She said, *'I don't think opinion is the perfect answer. It's not a fact.'* She went on to imply that whilst the accounts that people give

of an incident may vary, there is a correct version of events – truth is not completely relative. She expressed this as, *'Behind (pause) every story there are (pause) a real truth.'* She illustrated this claim by reference to personal experience, saying,

There's an incident, (pause) before we came to Australia that (pause) my sister went to the bank (pause), they queue, they were about to serve my sister and her best friend (pause). Her best friend put the money (pause) on the table and it was (clicks her fingers) stolen in ... two seconds.

In this account of the theft, the identity of the thief is unknown. But, in practice, Assunta said, people came to the conclusion that Assunta's sister was at fault, or as she said, *'So people thought that we steal it (pause). .. People make their own opinion.'* Not only did this cause hardship for Assunta's family, it also exemplified, for Assunta, the difference between fact and opinion. She said, *'Those time (pause) it's very hard because the fact is that (pause) my sister don't took the money (pause). .. But people thought that she steal it (pause). So, with people's view and with their opinion (pause) that's not the fact.'* In other words, personal experience has to be supplemented by other sources of knowledge.

In light of Assunta's distinction between fact and opinion, I asked her how she differentiated between the two. This proved a difficult question for Assunta to answer. Eventually, however, she concluded that evidence is what is needed to validate truth. She said, *'Evidence. I always need the evidence or the reference or ... If it's possible, reference as well as evidence.'* In other words, when it comes to being certain about something one needs a particular type of knowledge – evidence - which Assunta implied is not the same as opinion or one's personal knowledge of a situation. Applying this principle to empirical knowledge, Assunta suggested that certainty could be based on results. For example she said, *'with the hand washing technique (pause) there are different ways ... but (pause) at the end, like, I think the infection control rate .. The lowest rate is ... is the best way to practise.'* That is, empirical results are an evidence-based way to determine best practice but even here personal experience is important in reinforcing certainty. Assunta said, *'You learn from the book, people (pause) who know the knowledge wrote the book ... When you do it (pause) and when you see the results I think (pause) ah, you experience it.'* That is, Assunta distinguishes between opinion and fact but recognises the certainty that comes from experiencing something that has been also been empirically validated.

Agency

Assunta's processes of comparing personal experiences also contributed to her sense of agency. For instance, she said, *'when we arrived here, it's hard but ... thinking about back then, there are people who are starving. We're very grateful that we're here, alive, safe, got shelter.'* That is, her comparison between conditions in her country of origin and Australia emphasised the improvements in her life and the progress she had made rather than the losses that could be associated with the refugee experience. This infused the interview with a sense of agency. Her sense of agency, however, was amplified by another aspect of her justification of knowing that involved going beyond a comparison of her past and present to envisage a future in which she and her family make changes to conditions in her country of origin. Whilst she was hesitant to speak in much detail about this topic she dreamt that, *'One day, go back. We go back (laughs self-deprecatingly). Yeah, the family have a huge plan for the future.'* It is clear, moreover, that there was a concrete plan to achieve the dream because the family was already raising money for the venture. Assunta said, *'we invest three property at the moment (laughs). So, (pause) planning to build some hospital, or clinic or school – one day.'* She ended with a note of caution about her family's plan, *'It's a big plan but it's not easy to achieve what we want. But it's just a plan. It's a plan.'* In these passages, Assunta conveyed a sense of agency that went beyond systematic evaluation and included a vision of the future and a sense of collective action.

Structure

Another critical feature of Assunta's personal epistemology is the sense of structure that underpinned her justification of knowing. For instance, like Pavathi and Hurriyet, she described her education as a sequence of steps each of which laid the groundwork for the next step. She said, *'If I go straightaway from Year 12 to Bachelor of Nursing, I don't think I'll be able to cope ... I think I learn from (pause) the stepping stones that I go through.'* Similarly she also saw knowledge as cumulative, as building on positive and negative experience, rather than as a series of isolated items with no clear relationship to each other. She said, *'There are negative experiences, but (pause), I think the positive experience that I gain always overcome.'* Returning again to the theme of hardship she said, *'with the hardship that we (pause) suffer makes us more mature.'* In other words, she attributed the development of maturity to the experience of hardship and in that way suggested the interrelationship of the two. She said, *'We know everything when we're 13. We know that we don't have money ... We know that*

we need to take care of our younger siblings. We know mum's working, we know that dad's working.' This is in sharp contrast to Faith and Rosa who seemed to view negative learning experiences only as events that hold them back, not as part of a bigger picture that is intrinsically comprised of highs and lows.

5.5.2.3 Conclusion to Assunta's interview report

Assunta's interview confirmed her ability to critically engage with ideas, thereby confirming that evaluative knowing remained an important aspect of her personal epistemology. The interview, however, revealed the complexity of her epistemological lens in a way not shown by the 2014 writing task. Importantly, the interview highlighted how Assunta's personal epistemology emerged in the context of refugee experience as well as in the context of academic study. Consistent with her experiential source of knowledge she also demonstrated a sense of agency and advocacy on behalf of others. Like Hurriyet, Assunta envisaged a collaborative social change project in her country of origin. In Assunta's case, she described how she and her family were actively planning and fundraising for a health care project that would provide services not previously available in their country of origin. In other words, her sense of agency was supported by a concept of knowledge as collaborative and in this regard goes beyond the characteristics of an evaluative knower as described in Chapter 4. That is, she assumes that knowledge cannot only be evaluated but that new knowledge can be generated in concert with others.

5.6 Interview implications

This section addresses four implications of the interviews. These are the implications for: the categorisation of the interviewees; the description of the epistemological lenses identified in Chapter 4; the number of epistemological lenses revealed by the study; and understanding how multiple lenses may influence individuals. The implications of the interviews for the study more broadly are considered in section 6.3.

5.6.1 For study participants

The implication of the interviews for the categorisation of study participants in terms of their epistemological lens is that the personal epistemology of four interviewees has remained relatively stable (Rosa, Faith, Liz and Meshell). The personal epistemology of four others has changed to the extent that they can no longer be categorised by the lens initially ascribed to them (Emilio, Pavathi, Hurriyet and Assunta). These changes

are summarised in Table 5.2 which compares the epistemological lens assigned to each interviewee in 2009 with the lens assigned to the same person in 2014.

Table 5-2: Interviewees by epistemological lens in 2009 and 2014

Interviewee	2009 epistemological lens	2014 epistemological lens
Rosa	Champion knowing	Champion knowing
Emilio	Champion knowing	Inclusive (Tentative)
Faith	Passive knowing	Passive knowing
Pavathi	Experiential knowing	Experiential knowing / evaluative knowing
Hurriyet	Inclusive (Tentative)	New lens needed?
Liz	Evaluative knowing	Evaluative knowing
Meshell	Evaluative knowing	Evaluative knowing
Assunta	Evaluative knowing	New lens needed?

5.6.2 Refined descriptions of five epistemological lenses

The interviews also have implications for understanding five of the six epistemological lenses identified in Chapter 4.

5.6.2.1 *Champion knowing*

In light of Rosa's interview, it can be argued that the concept of a champion knowing lens as described in Chapter 4 continues to be supported by the evidence. That is, in regard to the certainty and structure of knowledge, the interview demonstrates a sense of certainty as a default position and an assumption that many areas of life can be viewed through a single framework. Moreover, the interview offers vivid examples of the merging of the knower's sense of self with an external source of knowledge and an approach to the justification of knowing that applies rules derived from external authority to particular situations to make judgments. The interview also demonstrates how the source and justification of knowing interact in champion knowing to enhance the knower's sense of agency as an enactor of knowledge rather than an evaluator of knowledge. That is, champion knowing can be associated with a high degree of agency for knowers as long as they do not experience conflict between the precepts of

authority and their personal experience. In situations of conflict, however, the interview demonstrates that champion knowers have few epistemological resources for resolving dilemmas and consequently experience a low level of agency in situations of conflict.

5.6.2.2 *Passive knowing*

In light of Faith's interview, it can be argued that the concept of a passive knowing lens as described in Chapter 4 continues to be supported by the evidence. That is, the interview is consistent with an approach to knowledge and knowing that assumes that the knower is distant from external authority, that knowledge is certain, can be accepted unexamined, and that knowledge is simple, discrete and concrete. The interview, however, provides further insight into the passive knowing lens by illustrating how the assumption that knowledge is atomistic plays a central role in mediating meaning. That is, the interview suggests that even when passive knowers access experiential knowledge they view experience atomistically, thereby encouraging a trial and error approach to the justification of knowing. This in turn means that experiential knowledge may not assist in developing an overarching framework for understanding experience or making decisions. This contributes to the low level of agency associated with the passive knowing lens.

5.6.2.3 *Experiential knowing*

In Pavathi's interview she seemed to draw on two epistemological lenses. Here, however, I consider how the interview supports the concept of experiential knowing as described in Chapter 4. That is, in regard to the certainty of knowledge there are occasions in the interview in which Pavathi assumes a dualism between right and wrong. As regards the structure of knowledge, she assumes that knowledge is experiential but can be generalised. She also sometimes draws on the experiential knower's assumption that lived experience is a source of authority and can be proffered uncritically as evidence. She is adamant, for instance, that her commentary on the benefits of the health care system in her country of origin is valid because it accords with her experience. She also displays the experiential knower's sense of agency in her account of how she facilitated her daughter's enrolment in an elite school.

5.6.2.4 *Inclusive (tentative) knowing*

In light of Emilio's interview, it can be argued that the concept of a tentative knowing lens as described in Chapter 4 continues to have merit but needs elaboration. That is, the interview confirms a lens that is characterised by a conception of truth as multiple

rather than “either/or” and assumptions about the structure of knowledge as flexible and capable of evolving. Whereas tentative knowing as initially described was characterised by the writer’s awareness of multiple sources of impersonal knowledge, the interview demonstrates that self-knowledge is also an element of this lens and can provide a firm basis for reflecting on multiple sources of impersonal knowledge. Moreover, the interview demonstrates that the justification of knowing can be more systematic and intentional than suggested on the basis of the writing tasks. Specifically, it may be concerned with articulating a third alternative amongst competing options. This in turn contributes to a heightened sense of the knower’s agency compared to the muted sense of agency where the knower is engaged primarily with sources of knowledge outside the self and lacks clarity about strategies for the justification of knowing. In other words, what appeared as tentative knowing in the writing tasks may be better described as inclusive knowing while recognising that this lens encompasses more and less confident knowers. This conclusion accounts for the finding in Chapter 4 that tentative knowers can range from those who uncritically report differing points of view without resolving differences to those who use empathetic or imaginative strategies to arrive at a resolution of differing viewpoints.

5.6.2.5 *Evaluative knowing*

In the light of Liz and Meshell’s interviews, it can be argued that the concept of an evaluative knowing lens as described in Chapter 4 continues to be supported by the evidence but needs extending. That is, the interviews are consistent with an approach to knowledge and knowing that assumes that: the knower is primarily engaged with impersonal knowledge; that certainty in specific cases can be arrived at on the basis of evidence; and that knowledge is hierarchical and interrelated. The combination of engagement with multiple sources of knowledge and a systematic process for weighing up and implementing insights contribute to a strong sense of agency and contextual certainty among evaluative knowers.

The interviews, however, extend understanding of the evaluative knowing lens in two ways. Firstly, the interviews illustrate how self-knowledge and personal experience can contribute to the authenticity of decision-making and thinking in evaluative knowers. Secondly, the interviews demonstrate that evaluative knowing can encompass reasoning in practical, concrete contexts as well as engagement with abstract ideas and consideration of emotional realities. This latter aspect of the interview may suggest that there are two forms of evaluative knowing – one concerned with practical

contexts and one with more conceptual or relational contexts. Whatever the context, however, the key criterion of evaluating situations or information from multiple perspectives, including theoretical sources or other sources beyond the immediate context, remains. On this basis, it can be argued that the interviews augment understanding of the evaluative knowing lens rather than suggesting that the lens as originally described is not empirically supported.

In summary, as a result of the interviews:

- The champion, passive and experiential knowing lenses are substantially unchanged;
- Inclusive (tentative) knowing is renamed and expanded to include lived experience as a source of knowledge;
- Evaluative knowing is also expanded to include lived experience as a source of knowledge and to include its operation in practical contexts.
- Individualistic knowing - no interview was available to enable a comparison.

5.6.3 Other implications

Consideration of two further implications of the interviews concludes this chapter: the implication that individuals may draw on more than one epistemological lens and the implication that an additional epistemological lens may be discernible in the interviews.

The interviews illustrate that individuals may draw on assumptions from more than one epistemological lens. Pavathi's interview, for instance, confirmed that she continued to draw on experiential knowing whilst also demonstrating the assumptions of evaluative knowing. In the incident involving the supervisor's criticism of her workplace communication, for instance, Pavathi stood in the shoes of her supervisor to reflect critically on her own behaviour. This is characteristic of evaluative knowing. Moreover, in terms of the structure of knowledge, Pavathi went beyond the experiential knower's assumption that knowledge is personal but can be generalised to grasp the concept of an educational pathway as a structure composed of interrelated steps which she could systematically pursue to achieve her goal of becoming a nurse. Finally, her assumptions about the certainty of knowledge included the non-dualistic assumption that finding one's way may involve missteps as well as stepping stones and that both experiences could be helpful. In other words, Pavathi's interview serves as a caution against interpreting the research materials too rigidly in terms of one epistemological

lens or another. In reality, a knower may be drawing on the assumptions of more than one lens.

The interviews also illustrate that a new lens may be needed to incorporate ideas that do not fit easily into any one of the six epistemological lenses described in Chapter 4. That is, the interviews with Hurriyet and Assunta challenge my interpretative framework by emphasising collaborative and relational sources of knowledge that go beyond the internal, external and merged sources of knowledge posited by my framework.

Moreover, their capacity for envisaging a future forged by collective action goes beyond the justification of knowing characteristic of either an inclusive or evaluative knower as described in Chapter 4. Hurriyet, for instance, demonstrated procedures for reflecting on experience and visualising alternatives consistent with tentative (inclusive) knowing. But she also assumed that new knowledge can be generated and implemented.

Similarly, Assunta's interview confirmed her ability to critically engage with ideas, thereby confirming that evaluative knowing remained an important aspect of her personal epistemology. Assunta, however, also envisioned a collaborative social change project in her country of origin.

Chapter 6: Conclusion

The overall aim of the current study was to **understand the personal epistemology of tertiary preparation students** through analysis of their writing tasks and interviews.

In order to achieve its aim the study sought to answer four research questions:

- How may previous scholarship inform the development of a holistic conceptual framework for the study of the personal epistemology of tertiary preparation students?
- How may naturalistic texts provide insights into the personal epistemology of tertiary preparation students?
- How may interviews contribute to our understanding of the personal epistemology of tertiary preparation students?
- What understandings about the personal epistemology of tertiary preparation students emerge from the application of the proposed conceptual framework to the research materials?

The answers to these research questions will now be presented in the form of the study's findings.

6.1 Finding 1: Conceptual framework

In response to research question 1, a holistic conceptual framework for the study was developed (see Literature Review) informed by previous scholarship in the field of personal epistemology (Baxter Magolda 1992; Belenky et al. 1986; Hofer & Pintrich 1997; Perry 1970); and sociocultural psychology (Wertsch 1998). The conceptual framework proved to be a useful tool for revealing the epistemological assumptions of study participants and the patterns formed by these assumptions that I term epistemological lenses. In the course of the data analysis, some elements of the conceptual framework proved more useful than others as discussed at the end of this section.

To begin, however, I re-present the conceptual framework as originally presented in section 2.4 and as used in the study.

Personal epistemology is defined as:

- The implicit assumptions that individuals hold about the nature of knowledge and knowing. These can be inferred from what people say in interviews or from their written statements.

Epistemological lenses are defined as:

- Clusters of assumptions about the nature of knowledge and knowing held by individuals that cohere in meaningful ways. These clusters of assumptions form patterns that I term epistemological lenses.

Signposts are defined as:

- Conceptual tools to be applied to the research materials to identify implicit assumptions about the nature of knowledge – its certainty and structure - and the nature of knowing– its source and justification.

Signpost descriptors

- The certainty signpost draws attention to implicit assumptions about how certain the knower can be about knowledge, and the type of certainty that is being sought.
- The structure signpost draws attention to implicit assumptions about how the components of knowledge relate to each other, and assumptions about whether knowledge is understood as concrete or abstract.
- The source signpost draws attention to implicit assumptions about where knowledge comes from, and the relationship of the knower to the source of knowledge.
- The justification signpost draws attention to implicit assumptions about the processes by which the knower can know.

Agency is described as:

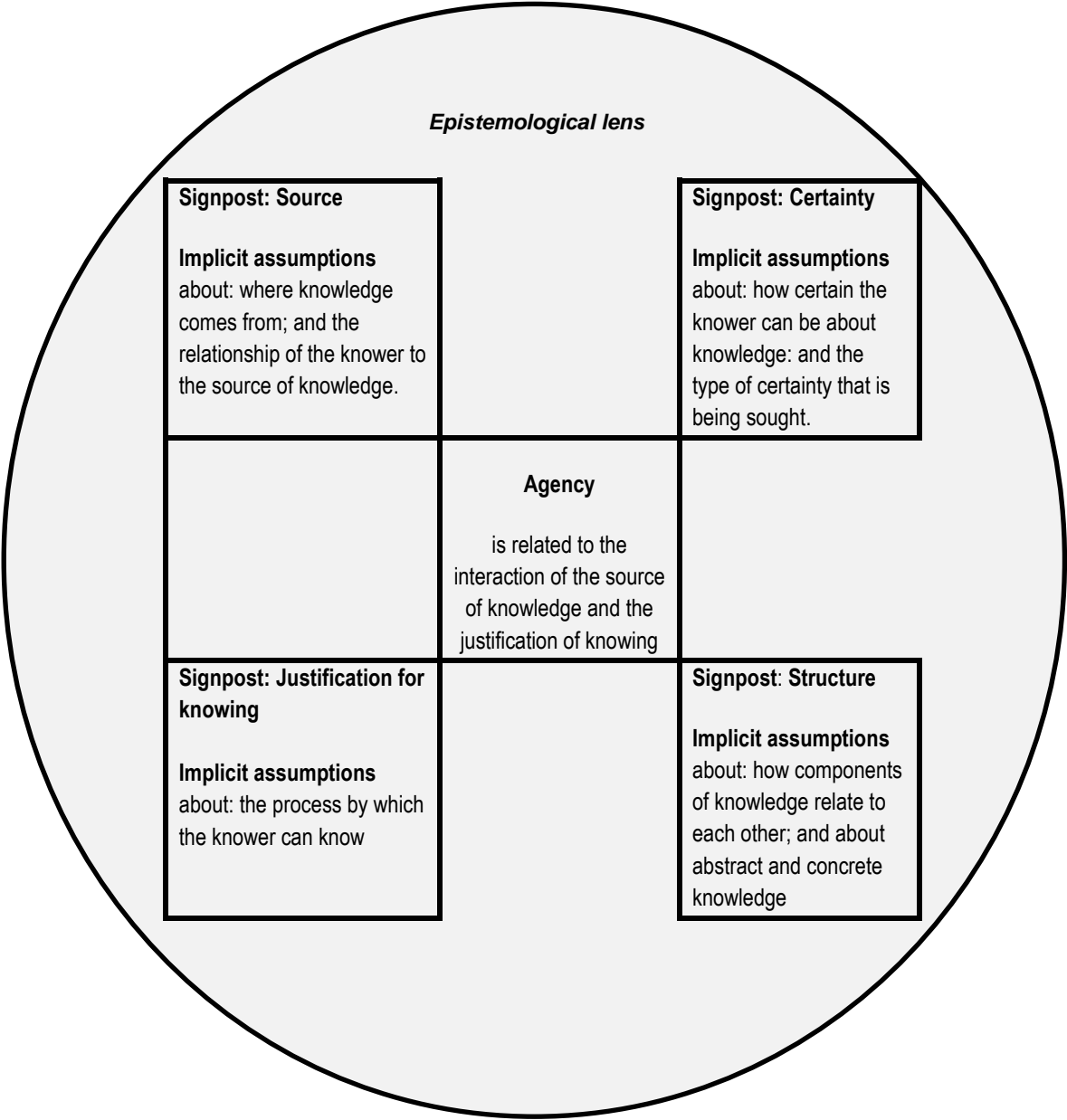
- Related to the interaction of the knower's assumptions about the source of knowledge and the justification of knowing.

Development is described as:

- The process by which contexts shape personal epistemology (in interaction with a person's current meaning-making) rather than a process by which an individual's personal epistemology follows a predictable trajectory of growth.

The core elements of the conceptual framework are schematically represented in Figure 6.1 This diagram is a practical tool for representing a person's epistemological lens at a particular point in time, as demonstrated in Figures 4.1-4.6.

Figure 6-1: Diagram of the conceptual framework



The signposts that proved most helpful in discerning the knower's assumptions about knowledge and knowing were the source of knowledge, justification of knowing and certainty of knowledge. That is, each of these signposts surfaced assumptions that could be distinguished from each other and which added to the richness of the description of the epistemological lens. The source signpost in particular proved useful as a way of enabling lived experience, including self-knowledge and relationships, to be incorporated in the conceptual framework. That is, the source signpost facilitated analysis of the research materials in a way that focused on the 'world as it is encountered in everyday life and given in direct and immediate experience, independent of and prior to explanation' (Kvale & Brinkmann 2009, p. 29). In this way, the source signpost is consistent with the phenomenological assumptions informing the study. The source signpost also draws attention to the relationship of the knower to knowledge and is, therefore, also consistent with the constructivist conception of knowledge as 'mediated through interaction with others' (Tarule 1996, p. 277).

The structure of knowledge signpost, on the other hand, may benefit from refinement as will be discussed in the implications for future research (Section 6.6.1). Similarly, the concept of agency as the relationship between the source of knowledge and the justification of knowing proved more complex than originally hypothesised, as is also discussed in the implications for future research (Section 6.6.1). For purposes of the study, however, the definition of development derived from Baxter Magolda (2004) proved adequate. That is, epistemological development is seen as the process by which contexts shape people (in interaction with a person's current meaning-making) rather than a description of what is possible in terms of developmental growth (2004, p. 39).

In summary, the study has shown how selected insights from previous scholarship can be integrated into a coherent and functional conceptual framework to facilitate the study of the personal epistemology of tertiary preparation students.

6.2 Finding 2: Naturalistic texts

In response to Research Question 2, the study found that the naturalistic texts used in the study proved to be an invaluable data source, enabling the development of credible insights into the personal epistemology of a group of 76 HSF students at both the level of the cohort and at the level of the individual.

6.2.1 Naturalistic texts and the HSF cohort

At the level of the cohort, the naturalistic writing tasks (see section 3.4.1) demonstrated that, in situations where it is impossible to conduct individual interviews with an entire cohort (as was the case for this PhD), such naturalistic texts provide an important avenue for gaining an overview of the epistemological assumptions of the cohort. To elaborate on this, I will illustrate how the insights into personal epistemology that emerged from the writing tasks provided the basis for describing six epistemological lenses.

Firstly, the writer's assumptions about the source of knowledge could be inferred from the writing tasks by examining such features as the use of personal pronouns. For instance, in many writing tasks the student-authors demonstrated what I deemed an 'emotionally invested collective vantage point' through a range of features that included conveying their point of view in terms of the first person plural. In contrast, the sense that the source of knowledge was distant authority was often conveyed by authors presenting impersonal information in the third person to support their point of view. In other words, the writing tasks provided the first glimpse of two epistemological lenses associated with external sources of knowledge but differing in the writers' relationship to the source of knowledge.

As regards assumptions about the justification of knowledge, these could be inferred from the writing tasks by examining such features as the way that writers justified their point of view. For instance, in a small number of writing tasks, some writers demonstrated what I termed an uncritical cultural lens. That is, they assumed that everyone is entitled to their own opinion and illustrated their case with reference to lived experience. By contrast, one student proffered his lived experience as compelling evidence for a point of view but with no suggestion that this was only his opinion. In other words, the writing tasks provided the first glimpse of two epistemological lenses associated with lived experience as a source of knowledge but differing in the writers' justification of knowing. In addition, the writing tasks provided the first indications of two other epistemological lenses: tentative (inclusive) knowing, and evaluative knowing, that were associated with multiple sources of knowledge but differing assumptions about the justification of knowing.

Moreover, the writing tasks allowed other assumptions about the structure and certainty of knowledge to be correlated with the differing assumptions about the source of knowledge and the justification of knowing to enable preliminary characterisation of

six epistemological lenses. In this way, naturalistic texts provided a mapping of the epistemological lenses of the cohort that was more extensive than could be achieved by the limited number of interviews conducted for the study. Significantly, the epistemological lenses revealed by the writing tasks were largely confirmed by the interviews.

6.2.2 Writing tasks and individual students

The second contribution of naturalistic texts (writing tasks) to the study is that they provided a valuable indication of the personal epistemology of individuals prior to the additional data that emerged from the interviews. This is supported, first, by reference to the student's retrospective comments on their 2009 writing tasks, and then by comparison of their 2014 writing tasks with their interviews.

Turning first to interviewees' retrospective comments on their 2009 writing tasks, these confirmed in some important respects my initial impression of their epistemological lens. In the case of Emilio (section 4.2.1.1), for instance, his commentary confirmed that I had correctly identified his assumptions in relation to the source of knowledge, justification of knowing, and certainty of knowledge. The commentary of most interviewees, however, confirmed only one aspect of my analysis of their 2009 writing task, albeit an important one. In this sense the interviewees' feedback on my analysis is only a partial triangulation of the efficacy of the naturalistic texts in providing insights into the personal epistemology of study participants.

The case for the value of writing tasks as indicators of personal epistemology was also evidenced in relation to the correlation between the insights into personal epistemology inferred from the 2014 writing tasks and the more comprehensive insights into the students' personal epistemologies generated by the interviews. In relation to the source of knowledge, for instance, the 2014 writing tasks of two students hinted that the writer may draw on lived experience as a source of knowledge and the interviews emphatically confirmed this. Moreover, it was not only in respect of particular signposts to personal epistemology that the 2014 writing tasks were helpful. They also accurately conveyed the writer's epistemological lens.

6.2.3 Limitations of the writing tasks

Despite the usefulness of the writing tasks, it is important to caution against interpreting a writer's assumptions about knowledge and knowing based on a single element of a text. For instance, in one of the 2014 writing tasks comparing health care systems, the

writer used the linguistic device of appealing to collective authority by use of the first person plural – a device that I interpreted as an indicator of champion knowing in the 2009 writing tasks. Overall, however, the writing task is strongly evaluative thereby illustrating the importance of holistic readings of naturalistic texts. In another case, the brevity of a 2014 writing task made it difficult to gain insight into the writer's epistemological lens. It was difficult to judge, for instance, whether it was based on personal experience although the focus on the impact of the health system on families suggested that this was the case. Interestingly, despite its brevity, my interpretation of it as signifying that the writer continued to see the structure of knowledge as atomistic was confirmed by the interview.

To conclude, the careful, holistic reading of naturalistic texts provided insights into the personal epistemology of tertiary preparation students at both the level of the cohort and at the level of the individual.

6.3 Finding 3: Interviews

In response to Research Question 3, the study found that the interviews made several significant contributions to the study. As shown in Chapter 5, the interviews were an invaluable data source, providing extensive insights into the personal epistemology and changing epistemological assumptions of individual students. They also provided evidence that lived experience may be a critical source of knowledge in epistemological development. The interviews, however, contribute more broadly to the study. That is, they contribute to reviewing Figure 4.7, and to illustrating how concepts from philosophy (see section 2.1) enhance, or in some cases render problematic, insights derived from applying the study's conceptual framework to the research materials. These latter contributions are discussed below.

6.3.1 Contribution of the interviews to the study

The six epistemological lenses identified on the basis of the writing tasks were summarised in Figure 4.7 in three categories. The first category comprised two lenses characterised by external knowledge; the second, two lenses characterised by lived experience as a source of knowledge; and the third, two lenses that were predominantly characterised by engagement with multiple sources of external knowledge (although sometimes lived experience was acknowledged).

One reading of these three categories is that they form part of an overarching trajectory of epistemological development that progresses from an uncritical engagement with

external knowledge to a critical engagement with external knowledge. In this reading, some knowers may access lived experience as a source of knowledge on the way to the full development of their epistemological lens as critical knowers engaged with external knowledge. Alternatively, knowers who 'detour' into an epistemology engaged with lived experience may end up in a 'dead end' characterised by an approach to the justification of knowing that avoids critical engagement with knowledge by suggesting everyone has a right to their own opinion or by advocating for their opinions on the basis of uncritical proffering of their own experience as evidence.

Contrary to this reading of Figure 4.7, the contribution of the interviews is to suggest that lived experience, far from being a 'detour' or 'dead end', is a fertile source of epistemological development. From this perspective, it can be argued that the study illustrates that there is no single developmental trajectory.

Of those initially engaged primarily with external knowledge, for instance, Rosa retained an approach to knowledge and knowing that demonstrated active but uncritical engagement with external knowledge, and Faith mainly demonstrated passive uncritical engagement with external knowledge. Liz and Meshell, however, demonstrated the development of evaluative engagement with external knowledge where the knower's personal epistemology is enriched by lived experience including self-knowledge. A fifth student (Emilio) who was initially predominantly engaged with external knowledge later demonstrated a personal epistemology characterised by engagement with lived experience and juggling multiple valued options. In other words, the interviews illustrate different ways in which knowers grapple with external sources of knowledge and, to varying extents, integrate lived experience as a source of knowledge into their personal epistemologies.

The interviews also demonstrated personal epistemologies characterised by lived experience as the dominant source of knowledge. This is epitomised by three of the interviewees who developed approaches to knowledge and knowing that included critical engagement with lived experience where choices are seen as clear cut at the level of the individual (Pavathi); and critical engagement with lived experience where the focus is on the impact of decisions at the collective level (Hurriyet and Assunta). In the latter case, two forms of the justification of knowing appear – one characterised by seeking solutions based on mutual interest (Hurriyet), and one by seeking solutions in which one option is preferred on the basis of evidence (Assunta). Again, there is no single developmental trajectory. Rather, a picture emerges of different ways in which

knowers grapple with lived experience as a source of knowledge and, to varying extents, integrate external knowledge into their personal epistemologies.

The interviews also illustrate how concepts from philosophy enhance, or in some cases render problematic, insights derived from applying the study's conceptual framework to the research materials. This claim will be supported firstly by demonstrating how the concepts of embodied, relational and situated knowledge provided me with language to reflect on selected passages in the interviews, just as they had enhanced Belenky et al.'s (1986) understanding of subjective knowing. In Hurriyet's interview, for instance, the source signpost to personal epistemology drew my attention to her remark that '*I always wanted to be a nurse. I had that passion to be a nurse.*' The concept of embodied knowledge assisted me to understand the strength that she drew from this knowledge in the face of challenges to completing her education. She expressed this embodied knowledge as, '*deep down I knew I could do it. But I just needed to be strong.*' The concept of relational knowledge drew attention to the significance of Pavathi's relationships with her teachers that she expressed as, '*They give me, uh, energy and "you can do it!" and, uh, it is really helped me.*' Finally, the concept of situated knowledge was articulated in passages such as Assunta's account of how the privations that she witnessed in her country of origin fuelled her driving determination to study nursing. This is what she said: '*the town where I come from there's no clinic, there's no hospital, nothing So, people dies. Just die.*' She went on to say, '*that motivate my whole family. .. to go in the health industry. Because of the experience that we've got. Like, you see people dying in front of you, just because (pause), they bleed.*' In other words, from the point of view of situated knowledge, the interviews recount more than interesting anecdotes, they describe the origins of knowledge and action in lived experience.

Another insight drawn from philosophy that enhanced my understanding of the interviews was Saugstad's (2005) assertion that 'Practical knowledge involves knowledge of both the general and the particular and of how to combine them' (p.361). This drew my attention to the interweaving of the general and the particular in Liz's account of how she learnt to administer oxygen from a nurse-educator in the context of treating specific patients. Liz said, '*She knows that kids under two get this much oxygen, kids over two get this much.*' But, the educator was communicating more than a formula. She was also expanding on '*the whys and then the repercussions of what you're doing. And what to look for once you've, sort of, started a treatment.*' In other

words, the nurse-educator was emphasizing the need to apply theory in the particular circumstances of each patient and to be alert to how the patient responds.

As to another form of practical knowledge, *phronesis*, this was exemplified by Emilio's discussion of juggling competing demands. He said, '*I think about how that judgment might affect me in the future what results I would get from it*' and, '*how would it benefit me or other people in the future?*' In other words, with respect to life decisions he reflects pragmatically on how to reconcile his own needs and those of people around him. This is consistent with Saugstad's (2005) discussion of *phronesis* as consisting of 'acting both appropriately and morally' (p. 356) and connected to consideration of collective wellbeing as well as the needs of the individual (Dunne & Pendlebury 2007, p. 206).

Despite the fact that the interviews contain many examples of practical knowledge, both *techné* and *phronesis*, the distinction between theoretical and practical knowledge made by Saugstad (2005) sits uneasily with the six epistemological lenses that I have described. This is because Saugstad argues that the implication of Aristotle's categorisation of knowledge is that 'practical forms of knowledge exist in their own right and with their own characteristics' (p. 347). My categorisation of epistemological lenses, however, does not align precisely with Saugstad's distinction between practical and theoretical knowledge.

For Saugstad, theoretical knowledge is concerned with 'observing the world from outside' (p. 355) and does not require learning through experience. In my description of inclusive and evaluative knowing, however, I argue that knowers whose epistemology is initially characterised by impersonal or external knowledge may also acquire knowledge through lived experience and demonstrate forms of practical knowledge. In other words, inclusive and evaluative knowing in my categorisation are not demarcated by theoretical versus practical knowledge but by different approaches to the justification of knowing and the type of certainty being sought - whether knowers seek outcomes in which one point of view is preferred over another or outcomes that incorporate competing points of view. These approaches can be applied in theoretical or practical domains. A project for future research, therefore, would be to conduct a study that would review the epistemological lenses in the current study specifically with reference to distinctions between theoretical and practical knowledge.

6.3.2 Limitation of the study

One limitation of the study, however, is that whilst the writing tasks provided a basis for inferring the epistemological assumptions of the whole cohort, only eight students were subsequently interviewed and then only once. The study therefore provides a comprehensive account of participants' personal epistemology at one point in time but only provides a retrospective account of epistemological change. To explore the process of epistemological change more comprehensively additional interviews are needed. This invites additional research.

6.4 Finding 4: Six epistemological lenses

In response to Research Question 4, the study has inferred six epistemological lenses from the research materials using the conceptual framework. These lenses represent six patterns of assumptions about knowledge and knowing and an associated form of agency demonstrated by the tertiary preparation students in the study. The six lenses are champion knowing, passive knowing, individualistic knowing, experiential knowing, inclusive knowing, and evaluative knowing. The lenses are described in sections 4.1.1 to 4.1.6 and the descriptions are reviewed with reference to the interviews in section 5.6. As discussed in section 6.3.1, these lenses do not represent a single developmental trajectory.

The six epistemological lenses can be presented in pairs in order to highlight the assumptions that each pair of lenses have in common and the assumptions that distinguish between them. The six lenses, grouped in three pairs, are summarised in Table 6.1 overleaf.

Table 6-1: Assumptions associated with each pair of lenses in the current study

Lens	Source	Justification	Certainty	Structure	Implications for agency
Champion	External - merged	Extolling or enacting knowledge	Either/or	Particular is subsumed in the general Consistent with deductive reasoning	Agency: high on behalf of ultimate authority
Passive	External - distant	Uncritical accumulation of knowledge	Either/or	Knowledge is discrete Consistent with inductive reasoning	Agency: low
Individualistic	Lived experience	Opinions are individual choices	Rhetoric of choice makes opinions unassailable	Knowledge is personal and particular	Agency: high – personal experience validated by rhetoric of choice
Experiential	Lived experience	Lived experience can be evidence	Certainty on basis of lived experience	Experiential knowledge can be generalised	Agency: high on behalf of self or others
Inclusive	Multiple including lived experience	Interpretative processes are required	Multiple vantage points to be accommodated	Knowledge is flexible	Agency: demonstrated through emergence of 'third way'
Evaluative	Multiple including lived experience	Evaluative procedures are needed	Knowledge can be evaluated to enhance certainty	Knowledge is hierarchical	Agency: demonstrated through emerging contextual certainty

6.5 Contribution to scholarship

The scholarly significance of this project lies firstly, in the insights into personal epistemology generated by the application of signposts to the data (section 6.5.1), secondly, in the demographic characteristics of the cohort (section 6.5.2) and finally, in the data collection methods (section 6.5.3).

6.5.1 Significance of the signposts

The significance of the signposts is threefold: they have a role in clarifying similarities and distinctions between the epistemological lenses in the current study and epistemological categories in earlier studies; they reveal the importance of lived experience in the emergence of personal epistemology; and within the current study they clarify distinctions and similarities between epistemological lenses (see Table 6.1). This section will discuss the first two points.

6.5.1.1 Role of signposts in distinguishing between current study and earlier research

The role of the assumptions associated with each signpost in clarifying distinctions between epistemological lenses in the current study and the positions/perspectives/phases of earlier research is now discussed. The comparison draws on the work of Perry (1970), Baxter Magolda (2004), Belenky et al. (1986) and Brownlee et al. (2010). Comparisons are not always drawn with Baxter Magolda's phases of epistemological reflection because the focus of her study was on the participants' views of the role of the instructor, learner, peers and evaluation in learning, (2004, p. 32). This means that the study's phases do not consistently report the participants' assumptions about the justification of knowing. Nor is there always a comparison with Brownlee et al.'s epistemological thinking profiles because these are not described with the level of detail provided by Perry and Belenky et al.

The champion knowing lens shares with Perry's (1970) dualism the characteristic of a 'we-right-good' relationship between the knower and the source of knowledge. The difference between champion knowing and dualism is in assumptions relating to the justification of knowing and the structure of knowledge. The champion knower emphasises extolling and enacting certain knowledge derived from authority which is consistent with the assumption that the structure of knowledge subsumes the particular in the general and with a high sense of agency on behalf of ultimate authority. That is, the champion knower justifies knowledge by starting from an assumption of an overarching framework of certain knowledge and compares the particular situation to the general principle to determine its validity. Perry's dualists, on the other hand, emphasise collecting discrete 'rightnesses' by hard work and obedience with an associated low level of agency. That is, the emphasis on accumulating discrete items of information to build towards a big picture of certain knowledge is less empowering

for the knower than the sense of certainty which the champion knower brings to each situation.

The passive knowing lens is indistinguishable from Belenky et al.'s (1986) received knowing and Baxter Magolda's (2004) absolute knowing (receiving pattern). It is characterised by an 'authority-right-they' relationship between the knower and the source of knowledge. It is 'where people equate learning with passively receiving and storing information, with dualistic notions of truth and knowledge' (Bond, L, Belenky & Weinstock 2000, p. 710). That is, received knowers look outside the self for the source of knowledge whether they are operating in the context of formal education or daily life. In this respect, Belenky et al.'s received knowers have a lot in common with the passive knowers in the current study who look to authoritative sources such as family members, governments or text books for knowledge. Baxter Magolda says of absolute knowing (receiving pattern) it is where knowledge is certain and known by those designated as authorities and knowers focus on listening and recording knowledge to learn (2004, p. 34). Passive, received and absolute knowing (receiving pattern) are characterised by low levels of agency.

The individualistic lens is similar to Perry's (1970) multiplicity in that knowers in both cases share the common assumption that everyone has a right to their own opinion. The difference between individualistic knowing and Perry's position of multiplicity is that for individualistic knowers the source of knowledge is explicitly lived experience. In Perry, on the other hand, the source of knowledge that shapes this epistemological position could be engagement with multiple points of view in an academic curriculum. In some cases, however, he attributes the emergence of multiplicity to the student's oppositional personality which is more suggestive of self-knowledge - a form of lived experience in my conceptual framework – but the point is not developed in Perry. Whether the source of knowledge is lived experience or the exposure to multiple points of view in the curriculum, the agency of individualistic knowers and multiplists is high because their experiences and opinions are validated by the rhetoric of choice.

There is no equivalent epistemological position in Perry (1970) to the experiential knowing lens where the source of certain knowledge is lived experience. That is, in Perry certain knowledge derives from Authority. In Belenky et al. (1986), by contrast, subjective knowing assumes that lived experience is a source of certainty and in this sense is analogous to experiential knowing. The signposts in the current study, however, extend our understanding of the contexts in which lived experience as a

source of certain knowledge can emerge and the subtle differences in the form that it can take.

The experiential knowers whose epistemological perspective is most similar to that of subjective knowers are those who respond to the writing task topic on gender roles in terms of their own experience of relationships. For them, truth 'is an intuitive reaction – something experienced, not thought out, something felt rather than actively pursued or constructed' (Belenky et al. 1986, p. 69). Experiential knowing, however, is also often demonstrated in writing tasks focussed on broad social issues such as the provision of health care. That is, experiential knowing sometimes emerges in a context of lived experiences other than personal or family relationships or gender relations. Such knowledge often emerged in the context of witnessing serious failures in health care provision in the knowers' country of origin and experiencing health care provision in Australia as meeting the knower's needs. For these experiential knowers, truth is something directly apprehended – something experienced, not thought out, something lived rather than actively pursued or constructed. In other words, they look to their lived experience as directly apprehended, rather than intuited, for evidence to support their point of view. The agency of experiential knowers and subjective knowers is high and often takes the form of advocacy on behalf of self or others.

There is no equivalent in Perry (1970) to the inclusive knowing lens where the justification of knowing assumes that interpretative rather than evaluative processes are required and the certainty of knowledge assumes that multiple vantage points need to be accommodated. The inclusive knowing lens, however, shares some similarities with Belenky et al.'s (1986) connected knowing (a form of procedural knowing) and Brownlee et al.'s (2010) practical evaluativism. The first relates to similarities in assumptions about the type of certainty being sought – in the case of connected knowers, the type of certainty being sought is built on understanding (Belenky et al. 1986, p. 101) whilst practical evaluativists value and respect varied perspectives (Brownlee, Berthelsen & Boulton-Lewis 2010, p. 109). In the case of inclusive knowers, the type of certainty being sought seeks to accommodate differing views. A second similarity relates to the justification of knowing in inclusive and connected knowing that can be summarised as assuming that thinking is a process of enquiry rather than a process of argument. Belenky et al.'s connected knowers, for instance, try to enter the frame of the other person, to understand the premises of their argument (p. 101). Inclusive knowers attempt to see the merit in multiple points of view, including articulating a third alternative amongst competing options based on mutuality rather

than the dualism of inflexible alternatives. Connected knowers, inclusive knowers, and practical evaluativists assume that there are multiple sources of knowledge but lived experience is more prominent as a source of knowledge among inclusive knowers and practical evaluativists. The agency of connected knowers and inclusive knowers is high where they have become proficient at using their preferred processes for the justification of knowing.

Evaluative knowing: The evaluative knowing lens shares a number of common assumptions with Perry's (1970) relativists, Belenky et al.'s (1986) separate knowing (a form of procedural knowing) and Brownlee et al.'s (2010) complex evaluativism. The first relates to similarities in assumptions about the type of certainty being sought – namely, emerging contextual certainty amidst multiple vantage points. The second relates to similarities in the justification of knowing that can be summarised as assuming that thinking is a process of argument rather than a process of enquiry. Both relativists and separate knowers, for instance, are concerned to develop a 'mode of thinking powerful enough to construct arguments to meet the standards of impersonal authority' (Belenky et al. 1986, p. 101). Complex evaluativists use research and theory to analyse information to arrive at their own opinions (2010, p. 108). Evaluative knowers use processes including the systematic evaluation of situations against an external standard such as fairness or the consideration of specific situations in a wider context such as economic development. Relativists, separate knowers, complex evaluativists, and evaluative knowers, all assume that there are multiple sources of knowledge but lived experience is more prominent as a source of knowledge among evaluative knowers. The agency of all four types of knowers is high where they have become proficient at using their preferred processes for the justification of knowing.

6.5.1.2 Role of source signpost

The study also makes a contribution to scholarship by illustrating the significant role of lived experience in the development of personal epistemology. In the study, lived experience is shown to contribute to a sense of certainty that lies within the self rather than with external authority but is not necessarily associated with the assumption that everyone has a right to their own opinion. Lived experience is also shown to contribute to complex assumptions about the justification of knowing that may be evaluative of competing evidence or inclusive of multiple points of view. Finally, in two of the interviews, lived experience is shown to be associated with assumptions about knowledge that go beyond critique of ideas and practices to include assumptions about

knowledge as a collective endeavour directed at generating new knowledge and new practices.

6.5.2 Nature of the cohort

The aim of the current section is to explore the relationship between personal epistemology and demographic characteristics. The groundwork for the analysis of epistemological lenses in relation to demographic characteristics was laid in section 3.3.3 where the demographics of the HSF cohort were described in comparison to cohorts in three landmark American studies and one important Australian study of personal epistemology. In order to explore the significance of the demographic characteristics of the HSF cohort, the six epistemological lenses described in Chapters 4 and 5 are grouped in three pairs as summarised in Table 6.1. The pairs are champion / passive knowing (characterised by an external source of certain knowledge), individualistic / experiential knowing (characterised by an experiential source of certain knowledge) and inclusive / evaluative knowing (characterised by multiple sources of uncertain knowledge).

Grouping the pairs in this way means that comparisons can be made with earlier researchers discussed in section 3.3.3 including Baxter Magolda (1992, 2004) whose cohort had very different demographic characteristics to the HSF cohort, and to two studies in which there were similarities with the demographic characteristics of the HSF cohort - Belenky et al. (1986) and Brownlee et al. (2010). A comparison is not drawn with Perry's (1970) findings because he does not provide a quantitative account of the epistemological positions in his study, or compare the demographic characteristics of one group of knowers to other groups of knowers.

6.5.2.1 Comparison with Baxter Magolda

Comparing the demographic profile of the HSF students with the participants in Baxter Magolda's (1992) study (see Table 3.4) it can be seen that the two cohorts differ with respect to level of educational achievement, language background and age. In Baxter Magolda's study, all the participants were enrolled at university (college) at commencement of the research and all of them were aged 18 years in their freshman year. None of them were reported as having an ESL background. By comparison the HSF students were very different, especially not meeting the educational criteria for enrolment in the Bachelor of Nursing at commencement of the study, and in that over one third had not completed secondary education in Australia. They were also older

than Baxter Magolda's freshmen with almost half the HSF cohort being aged 22 or older. More than two thirds of the HSF cohort were from an ESL background.

Comparing the patterns of epistemological positions/lenses amongst the two groups, there are two major differences that can be described quantitatively – fewer than half (41%) the HSF students assume that there is an external source of certain knowledge compared to more than two thirds (68%) of the freshmen in Baxter Magolda's (1992, p. 71) study. Secondly, almost a third (31%) of the HSF students assume that there are multiple sources of uncertain knowledge that need to be judged in context but amongst Baxter Magolda's freshmen there are no contextual knowers (p. 71).

This latter finding is the most significant difference between the two cohorts but is consistent with Baxter Magolda's (2004) finding that epistemological development in her cohort was most pronounced in the post-college years where the challenges of adult life provided the context for epistemological development (p. 38). In the case of the HSF inclusive/evaluative knowers, who are a microcosm of the HSF cohort in terms of their language background, secondary school completion and age, there is no single factor to which inclusive/evaluative knowing can be ascribed. Rather, the demographic characteristics of these knowers are consistent with the argument that lived experiences outside the bounds of formal education can shape personal epistemology by encouraging an awareness of multiple sources of knowledge and the need to interpret knowledge in light of experience and circumstances. As regards the 41% of the HSF cohort who are champion / passive knowers, the significance of their demographic characteristics is that they are more likely than the cohort as a whole to have completed secondary schooling (Year 12), to be younger - under 22 years of age - and to be from an ESL background. In other words, just as Baxter Magolda (1992, p. 71) reported the predominance of absolute knowing amongst the young and formally schooled freshmen in her study, champion/passive knowers in the HSF cohort were more likely than the cohort as a whole to be relatively young and more experienced in formal education, albeit often with an ESL background.

Overall the findings in respect of the demographic characteristics of champion/passive knowers and inclusive/evaluative knowers are consistent with Baxter Magolda's (2004) conclusion that epistemological development is fostered more by experiences in the post-college years than by college experiences.

Table 6-2: Proportion of Baxter Magolda and HSF cohorts by epistemological categories

Cohort	Epistemological category	% of cohort	Epistemological category	% of cohort
Baxter Magolda's Freshman*	Absolute	68%	Contextual	0%
HSF cohort in 2009	Champion / passive	41%	Inclusive / evaluative	31%

Source: *Baxter Magolda (1992, p. 71)

6.5.2.2 Comparison with Brownlee et al.

Comparing the demographic profile of the HSF students with the participants in Brownlee et al.'s (2010) study (see Table 3.4) it can be seen that the two cohorts are similar with respect to level of educational achievement, age and gender. In Brownlee et al.'s study, none of the participants was enrolled at university at commencement of the research, 32% had not completed high school, 19% were aged 25 or older, and 91% were female. Similarly, none of the HSF students had met the educational criteria for enrolment in the Bachelor of Nursing at commencement of the study, over one third had not completed secondary education in Australia, and 89% were female. Like Brownlee et al.'s cohort there was a number of older students - almost half the HSF cohort were aged 22 or older. The main difference between the cohorts was that more than two thirds of the HSF cohort was from an ESL background whereas none of Brownlee et al.'s participants were reported as of ESL background.

Comparing the patterns of epistemological beliefs/lenses amongst the two groups it can be seen that almost a third (31%) of the HSF students assume that there are multiple sources of uncertain knowledge that need to be judged in context whereas two thirds of Brownlee et al.'s (2010, pp. 107-8) participants adopt an evaluative approach to knowledge. Conversely, only 4% of Brownlee et al.'s participants are described as objectivist (p. 111) whereas 41% of the HSF cohort are champion/passive knowers. Whilst the descriptors of the epistemological lenses in the current study and the epistemological beliefs described in Brownlee et al.'s study are not identical, the comparison highlights the fact that the two studies with similar demographic profiles among their participants have a higher proportion of participants who take an evaluative stance towards knowledge than Baxter Magolda's (1992) study and a lower proportion of participants who look to authority for answers.

Table 6-3: Proportion of Brownlee et al. and HSF cohorts by epistemological categories

Cohort	Epistemological category	% of cohort	Epistemological category	% of cohort
Brownlee et al. cohort*	Objectivist	4%	Complex and practical evaluativists	66%
HSF cohort in 2009	Champion / passive	41%	Inclusive / evaluative	31%

Source: *Brownlee et al. (2010, pp. 107 -11)

6.5.2.3 Comparison with Belenky et al.

Turning now to Belenky et al.'s (1986) research, I will draw two comparisons. These are firstly, between the demographic characteristics of Belenky et al.'s subjective knowers and the HSF individualistic/experiential knowers; and, secondly, between Belenky et al.'s procedural knowers and the HSF inclusive/evaluative knowers. The comparisons are made in this way because Belenky et al. specifically describe the demographic characteristics of subjective and procedural knowers.

The first point to make is that the demographic characteristics of individualistic/experiential knowers are somewhat similar to the demographic characteristics of subjective knowers who make up almost half of Belenky et al.'s (1986) participants who were mostly white Americans. Belenky et al. say of their subjective knowers, 'These women were not usually students in prestigious colleges but were in more experimental or community educational settings. Many had been school dropouts ... Many had been married and raised children' (p. 56). Similarly, the individualistic/experiential knowers in the current study are more likely to have an English-speaking background, an incomplete secondary schooling and to be older than 22 at the commencement of the study. That is, being relatively more Anglo, older, and less experienced in formal education than the HSF cohort as a whole they have more in common with Belenky et al's subjective knowers than with the HSF cohort as a whole.

Comparing the demographic profile of Belenky et al.'s (1986) procedural knowers with that of the inclusive/evaluative knowers in the current study it can be seen that their demographic backgrounds are very different. Most of Belenky et al's procedural knowers were attending, or recently graduated from, prestigious colleges and were

'privileged, bright, white, and young' (p. 87). By contrast, as already outlined, the inclusive and evaluative knowers in the current study are a microcosm of the HSF cohort as a whole in terms of reflecting a range of language backgrounds, school experiences and ages. None of them, however, had met the entry criteria for the Bachelor of Nursing at the commencement of the study.

In other words, in terms of demographic characteristics, Belenky et al.'s (1986) procedural knowers have more in common with the educational background of Perry (1970) and Baxter Magolda's (2004) cohort than they do with the HSF cohort. On the other hand, Belenky et al.'s subjective knowers have more in common with the demographic characteristics of the HSF individualistic/experiential knowers than with the HSF cohort as a whole.

The comparison of the HSF epistemological categories with those of earlier researchers from the perspective of the demographic profiles of participants suggests that evaluative and inclusive knowing are associated with participants who have not participated in university education at the commencement of the study and who come from a range of language backgrounds, school experiences and ages. In this way, the study complements earlier research that has illustrated the contribution of university education to the development of evaluative forms of personal epistemology including relativism (Perry 1970), contextual knowing (Baxter Magolda 1992) and procedural knowing (Belenky et al. 1986). The study is consistent, however, with Baxter Magolda (2004) and Brownlee et al. (2010) in demonstrating the development of evaluative/inclusive knowing in participants who are either no longer tertiary students (Baxter Magolda) or who have not had extensive experience in tertiary education (Brownlee et al.). Among HSF participants, evaluative and inclusive knowing emerged in the context of the lived experience of complexity.

6.5.3 Data collection

One of the significant contributions to scholarship of the current study is that the research materials collected in the second stage of the research are naturalistic texts. They comprised writing tasks produced when the writers attended a university interview to assess their application to enrol in a tertiary preparation course. In view of their provenance it can be argued that they were produced in circumstances where the participants were not seeking to write answers to meet my expectations as a researcher and in this sense are authentic expressions of the participants' personal epistemologies. Moreover, similar texts may be available in many tertiary preparation

courses and consequently are available to other researchers interested in the personal epistemology of non-traditional university students.

The second significant feature of the research materials collected in the second stage of the research is that they did not explicitly focus on the participants' educational views or the role of the instructor, learner, peers and evaluation in learning (Baxter Magolda 2004, p. 32). Instead, the writing tasks that were the basis of the second stage of the research addressed topics that were mostly concerned with issues beyond the classroom. This was consistent with the fact that in 2009 many of the study participants had little experience of formal schooling in Australia, or, because of their age, had many significant life experiences beyond formal education that could have influenced their assumptions about knowledge and knowing. Given the characteristics of the study participants, it was appropriate to use research materials more similar to those of Kuhn (1991, pp. 9-10) who examined how epistemological awareness is a part of thinking and reasoning processes in every-day life. For this purpose, Kuhn, like King and Kitchener (2004, p. 6), used ill-structured problems to explore problems that cannot be answered by formal logic alone, and involve careful consideration of one's beliefs in light of supporting evidence.

In keeping with ill-structured problems, the writing tasks used in this study addressed topics that invited writers to take account of more than one perspective in responding to the topic. They also provided opportunities for writers to draw on academic knowledge or lived experience to address the topics. In this way, the writing tasks had the potential to chart broad themes relating to the source and justification of knowing and to the certainty and structure of knowledge posited by Hofer and Pintrich (1997). In short, the study drew on the data collection methods of previous researchers but selected from each researcher's practice the component relevant to the scale of the current research, the characteristics of the participants, and the focus of the research questions in the current study.

6.6 Implications

6.6.1 Implications for scholarship

Questions that arise from Chapter 5 that were beyond the scope of the study but future research in the field of personal epistemology may consider include: whether the descriptor of the structure of knowledge needs revising; how future research could better explore the forms of agency associated with epistemological lenses; and

whether an additional epistemological lens is needed to incorporate the generation of new knowledge?

There was no question specifically exploring the structure of knowledge in the interviews because my initial analysis of the writing tasks had not revealed the structure of knowledge to be as strong a theme as the source and certainty of knowledge and the justification of knowing. This may have contributed to the lack of clarity with respect to the structure of knowledge in the findings. In future investigations, however, it may be helpful to limit the scope of the structure of knowledge signpost to assumptions about the way that components of knowledge relate to each other. Another signpost could then be conceptualised to draw attention to implicit assumptions about whether knowledge is understood as concrete or abstract.

The rationale for this suggestion is that in the study, participants' assumptions about abstract and concrete knowledge seemed to vary independently of their other assumptions about the structure of knowledge. Abstract thought in the form of religious reflection was associated with inclusive knowing where the structure of knowledge is assumed to be flexible and changing. Abstract thought in the form of principles such as 'fairness,' on the other hand, was associated with evaluative knowing where the structure of knowledge is assumed to be hierarchical. That is, there was no consistency in relationships between the participants' assumptions about the nature of knowledge as abstract or concrete and their other assumptions about the structure of knowledge.

The conceptual framework utilised in the present study posited that the form in which the knower's agency appears in the text is related to the interaction of the source of knowledge and the justification of knowing. In other words, the concept of agency goes beyond the formal properties of assumptions about knowledge and knowing to which the signposts to personal epistemology direct attention. The concept of agency instead, 'extend[s] beyond the purely cognitive assumption to those forms of action, thought, feeling, purpose and care that are congruent with the assumption' (Perry 1970, p. 43). In the present study, the concept proved useful in highlighting the sense of agency associated with each epistemological lens described as an ideal-type. Moreover, the characterisation of agency as either high or low was mostly adequate as regards the description of the epistemological lenses inferred from the writing tasks. The interviews, however, allowed much more complex accounts of agency to emerge. In one instance, for example, an interview highlighted the difference between the level

of agency associated with the ideal type of an epistemological lens and the actual level of agency experienced by an individual faced with a conflict between lived experience and world view. In other cases, interviews highlighted the way in which the sense of agency of the individual can be amplified by others' support of their learning and a collaborative commitment to action. The implication of this finding for future research is that if the focus of the research is the agency associated with personal epistemology, written materials will only provide a static picture of agency. Interviews designed specifically to explore agency in a dynamic way would be needed. It also suggests that the description of agency as high or low will need to be replaced by much richer descriptions.

As regards the six epistemological lenses identified in the current study, further research is needed to clarify whether an additional epistemological lens is needed to capture assumptions in two of the interviews that are not reflected in the existing lenses. That is, interviews with Hurriyet, an inclusive knower and Assunta, an evaluative knower, demonstrate assumptions about knowledge and knowing that include an approach to the justification of knowing that goes beyond critique of ideas to include generation of new knowledge and implementation of collaborative processes for change. These assumptions were not included in the description of inclusive or evaluative knowing but were inherent in Hurriyet and Assunta's discussions of their intended collaboration with a women's education project and a health care project in their country of origin.

An issue for further research, then, is whether an additional lens is needed to reflect assumptions underpinning the development and implementation of new knowledge, or whether to re-conceptualise the existing lenses to incorporate not only the critique of knowledge, but also knowledge generation and collective as well as individual action? Such an additional epistemological lens would be consistent with Belenky et al.'s constructed knowers who 'feel a part of the effort to address with others the burning issues of the day and to contribute as best they can' (p. 152). It would go beyond Perry's (1970) committed relativism, however, where 'the term "Commitment" refers to an act, or ongoing activity relating a person as agent and chooser to aspects of his life in which he invests his energies, his care and his identity' (p. 135). That is, in Perry's committed relativism there is no discussion of knowledge generation, collective action, or socially critical action.

6.6.2 Implications for practice

The study of the personal epistemology of a cohort of demographically diverse tertiary preparation students may also have implications for educational practice because there are growing numbers of tertiary students from diverse backgrounds with demographic characteristics similar to the participants in the current study. The growing numbers are a result of Australian Commonwealth government initiatives to increase participation in higher education and vocational education and training for reasons of both economic efficiency and social inclusion. As a result, statistics released in early 2015 (Norton 2015) show a steady increase in offers to university applicants with a low Australian Tertiary Admission Rank (ATAR). In 2010, fewer than 2000 applicants with an ATAR below 50 received any university offer. By 2014, more than 7000 such applicants received an offer. Early enrolment figures for 2015 suggested that the number of low ATAR enrolments would continue to grow in 2015.

The implications of the growing diversity of the university population are contested, but a study tracking students who started their courses in 2005 found that only about half of students with an ATAR of 59 or below had completed a degree by the end of 2012 (cited in Norton 2015). The Norton study is consistent with earlier large, Australia-wide studies that have reported lower completion rates for 'other' students, that is, students accessing higher education on a basis other than their secondary schooling (Marks 2007; Martin, Maclachlan & Karmel 2001; Urban et al. 1999). In contrast, some smaller studies of cohorts of students in particular courses or universities (Bond, C 1996; Newell 2012; Pendergast 2000) have shown that completion rates for former tertiary preparation students are comparable to those for all students.

One strategy for addressing lower completion rates therefore may be to expand the use of tertiary preparation courses that have been shown to build the study skills and confidence needed for academic success (Bond, C 1996). In this context, the significance of personal epistemology scholarship is that it could enhance tertiary preparation course planning. Bond, Belenky and Weinstock (2000), for instance, report on the success of an intervention to support learners whose personal epistemology reflected the assumptions of silenced and received knowers. In addition, Baxter Magolda (1992, 2004) and Pizzolato (2003) argue that appropriately planned scaffolding experiences can support the emergence of the independent and contextual phases of personal epistemology that underpin critical enquiry.

Given these findings, it is significant that the current study has shown how naturalistic texts can be used to gain insights into personal epistemology because it suggests that educators in tertiary preparation courses may use naturalistic texts (such as an essay assignment completed in class) to gain insight into the personal epistemology their students bring into their study. This understanding can inform pedagogical and curricular strategies aimed at enhancing learning.

It is important to note that personal epistemology research does not provide a template for course design or teaching. However, it does offer a starting point for reflecting on the assumptions about knowledge and knowing that students bring to their formal education and the ways that these may influence their learning and course participation. The following is a brief sketch of implications for tertiary preparation courses of the epistemological lenses described in the present study.

6.6.2.1 Champion knowing and passive knowing: implications for practice

From the perspective of preparing students to successfully engage in tertiary education, the challenge of champion and passive knowing for educators is that these epistemological lenses do not encourage critical and reflective evaluation processes, nuanced judgements or respect for knowledge that does not derive from authorities. The two groups of knowers, however, differ with respect to their sense of agency and their assumptions about the structure of knowledge. These differences complicate the issue of how to plan tertiary preparation courses to meet the needs of both groups. In general, however, tertiary preparation courses can respond to the challenges of champion and passive knowing on at least two levels – building the confidence and self-esteem of the learner and providing a structured introduction to discipline knowledge and skills.

With respect to the former, enhanced confidence and self-esteem based on recognition that lived experience may be a legitimate source of knowledge, can contribute to epistemological development by providing an alternative perspective to that of authority. This could be helpful to a champion knower such as Rosa whose interview demonstrated that she had few inner resources for dealing with experiences that challenged her strongly held beliefs because she discounted the notion of learning from experience. A strategy for epistemological growth through confidence building is to provide opportunities for small group discussion to foster opportunities for students to reflect on their experiences and skills (Bond, L, Belenky & Weinstock 2000, p. 701). Confidence building activities may include practice at re-saying other people's words in

order to affirm that each person's experience or point of view is being heard (2000, p. 705). Small group discussions may also be used as an opportunity for collaborative knowledge construction. This could be helpful to a passive knower such as Faith whose interview demonstrated that her assumptions about the discrete structure of knowledge undermined her ability to learn from experience. Activities could involve problem solving exercises that require students to define a problem, articulate goals for proposed responses, brain storm possibilities, evaluate options and make choices. Such activities provide examples of how to reflect on discrete experiences within a broader framework, thereby enhancing analytic skills and potentially increasing self-confidence.

With respect to learning discipline related knowledge and skills, a tertiary preparation course such as HSF provides a structured introduction to foundation knowledge that is consistent with the assumption that there is an authoritative source of knowledge. Gradually, however, the course focuses on building students' skills to engage with knowledge more critically. In building numeracy skills in a nursing context, for instance, the HSF course engages students in tasks that initially require only a narrow range of cognitive skills such as recall and the practice of tasks such as multiplication and division. It then requires students to apply those numeracy skills in examples such as calculating medication dosages. Problem-solving tasks of this nature lend themselves to more complex cognitive skills such as evaluating hypothetical medication dosages with a view to modifying them to suit particular patients and to explain the processes involved. In undertaking these tasks students practice the skills of numeracy, conjecture, analysis, evaluation, justification and communication (Ellerton 2015). In other words, they are learning discipline-relevant knowledge and thinking skills in a context which does not necessarily involve them in directly engaging with controversial concepts in their discipline but lays the groundwork for such discussion. In this way, the HSF course provides opportunities for champion and passive knowers to acquire foundational skills and knowledge as well as more generic learning skills and knowledge relevant to successful participation in tertiary education.

6.6.2.2 Individualistic and experiential knowing: implications for practice

From the perspective of preparing students to successfully engage in tertiary education, the challenge of individualistic and experiential knowing for educators is that individualistic knowers reject the need for critical and reflective evaluation processes on the grounds that all opinions are equal, and experiential knowers generalise their

experience uncritically. In this way, their assumptions about the justification of knowing mitigate one of the strengths that they bring to tertiary education – their assumption that lived experience is a valid source of knowledge. McCormack (2002) has argued, for instance, that it is important for students to explore a subjectivist sense of reality – a sense of their own ability to make sense and determine what is true by their own processes and experiences. This is a key step in affirming their potential as knowers independent of external authority. Similarly, Daniels (2006, p. 6) found in her research with women that courses need to provide opportunities for students to relate their existing beliefs and knowledge to the classroom.

Tertiary preparation courses, therefore, can respond to the challenges of individualistic and experiential knowing by simultaneously affirming students' lived experiences by providing multiple opportunities for students to draw upon those experiences whilst encouraging them to reflect on their previous experiences. Such reflection could take into account the perspective of others and frames of reference outside immediate experience that can throw a different light on their own experience and other's experiences. Ellsworth (1989), for instance, encourages educators 'to take the students' experience as valid, but not without response ... To accept the immediate emotional, social and psychic experiences of the student but to critique them from the point of view of their implications for others' (1989, pp. 305-6). Respectful feedback and critiques of this kind could be helpful for an experiential knower such as Pavathi whose evaluation of the health care system in her country of origin demonstrated how she struggled to find a basis for evaluation other than her own experience. Such a limited basis for evaluation is not sufficient for successful participation in tertiary education. Hence the importance of tertiary preparation courses such as HSF in providing a structured introduction to procedures, practices and techniques for understanding, evaluating and communicating in a formal education setting.

With respect to learning discipline related knowledge and skills, individualistic and experiential knowers, like their champion and passive knowing peers will benefit from a structured introduction to foundation knowledge and skills that enables students to apply their knowledge and skills in diverse situations.

6.6.2.3 Inclusive knowing and evaluative knowing: implications for practice

From the perspective of successful participation in tertiary education, inclusive and evaluative knowers bring a number of helpful epistemological assumptions to tertiary

preparation courses. That is, they assume that there are multiple sources of knowledge and that judgment processes are needed to resolve or adjudicate differences of opinion in specific contexts. In other words, inclusive and evaluative knowers demonstrate a number of assumptions relevant to critical enquiry. The two groups of knowers, however, differ with respect to their assumptions about what type of judgment processes and what type of certainty is being sought. Their assumptions about the structure of knowledge also differ.

The challenge for educators then is to assist students to build a repertoire of academic skills consistent with their existing assumptions and to develop their awareness of alternative assumptions and skills. Or to put it another way, it is important for students to develop expertise in procedures, practices and techniques aligned with their predominant way of knowing as well as to learn the procedures, practices and techniques aligned with less familiar ways of knowing. Clinchy (2000), referring to separate and connected knowing, says 'Although individuals may have stylistic predilections in one direction or the other, all students need to develop skill in both modes so that they can deploy whichever is appropriate on a given occasion' (p. 32).

In terms of activities to develop and refine inclusive knowing, educators can use role plays in class to provide opportunities for students to take on and research roles that are not consistent with their own views. Simulations based on scenarios involving negotiated outcomes and forms of analysis associated with conflict resolution provide more extended opportunities for student skill development. In simulations students can learn how to apply the skills of conflict mapping to analyse information in terms of stakeholders and their interests, and then to practice constructing scenarios that posit lateral solutions to conflicts rather than solutions based on mutually exclusive options. These activities could be helpful to inclusive knowers such as Emilio whose interview showed that he had developed the strategy of '*juggling*' to balance competing interests at the personal level but did not seem familiar with more formal analytical tools for identifying competing interests and seeking to find ways to accommodate them. Such skills are applicable in a personal and in an academic context. Such activities could also be useful to evaluative knowers by introducing them to new assumptions and processes for the justification of knowing.

Tertiary preparation courses also have a responsibility to develop the epistemological assumptions and academic skills associated with evaluative knowing. These were elucidated by Perry (1970) who argued that when an educator asks students to read

conflicting authorities and to assess the nature and meaning of the conflict, 'he is in a strong position to assist them to go beyond simple diversity into the disciplines of relativity of thought ... the relation, the relativism, of one system of thought to another' (p. 35). In her interview, Assunta described how she was introduced to this approach to education where *'you have to read, you have to understand, you have to swallow everything and interpret it by yourself and then that's how you learn.'* The assumptions and skills of this approach, however, are not easily learned as Assunta explained, *'I learnt to cope from step by step. If I go from here [initial education] to Bachelor, I don't think I'll be able to cope with anything. I think I learn from (pause) the stepping stones that I go through.'* In other words, evaluative knowing is more than a pattern of assumptions about knowledge and knowing. It also requires systematically learning the conventions, paradigms and practices of public knowledge and the application of procedures for comparing and contrasting and constructing interpretations (McCormack 2002, p. 498). Tertiary preparation courses can be a step in this process.

6.7 Completing the circle

In Chapter 1, I drew on excerpts from student writing tasks and personal statements to convey something of the reality of the lives of study participants and the context in which their personal epistemologies developed. Now, coming full circle, I would like to leave the last words to the interviewees by exemplifying the range and diversity of their assumptions about the source and certainty of knowledge, the justification of knowing and their sense of agency.

Hurriyet and Rosa show how the source of knowledge can be conceived in contrasting ways. For Hurriyet, lived experience is an important source of knowledge whilst Rosa turns to authoritative texts.

I can say the knowledge is from the experience, yeah, so the experience that I've been through I can say it's a comparison of both [my home country] and Australian society From personal experience, you see what's going on between the two different countries and you're actually comparing them.
(Hurriyet interview 27 March, 2014).

The Bible tells it all. The Bible tells it all. And then, going beyond that, books. There's nothing you can't learn in a book. (Rosa interview, 18 March 2014).

As for the certainty of knowledge, Emilio and Assunta articulate opposing assumptions about the possibility of being certain. To Emilio, the world is not totally knowable; for Assunta, however, one can rely on evidence.

I don't think that you can ever be possibly sure about something. I think it's what you can settle with. It's what you can make yourself believe that I've made the right decision (Emilio interview 14 March 2014).

Behind (pause) every story there are (pause) a real truth I always need the evidence I don't think opinion is the perfect answer. It's not a fact (Assunta interview, 1 April, 2014).

In the study, participants demonstrate assumptions about the justification of knowing that are many and varied. Assumptions include purposive reflection on action (Pavathi), a *laissez faire* approach (Faith) and the integration of theory and practice (Liz).

[whether] it's right or wrong we have to go through it Even if you're wrong ... it makes you get some ideas. It's not gonna work this way, so ... (Pavathi interview, 18 March, 2014).

But for me, it's just trial and error, pretty much (Faith interview, 21 March 2014).

Liz, on the other hand, appreciated the integration of theoretical knowledge, '*the whys and then the repercussions of what you're doing*' and situated knowledge, '*what to look for once you've, sort of, started a treatment*' (Liz interview, 1 April, 2014).

Finally, agency and the power of knowledge to inform collaborative action proved to be of importance to several students. This was exemplified by Hurriyet, and the last word therefore goes to her:

So, my view and others, like, we can get together ... we can go and educate womens. ... I believe that we can make change. Like, if we cooperate with the womans working towards that back home. So, yeah! (Hurriyet interview, 27 March, 2014).

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Appendix A: Permission to use university records

From: Natalina Velardi
Sent: Tuesday, 23 October 2012 5:18 PM
To: Fran Newell
Cc: Mary Simpson; Legal Services
Subject: FW: Re Privacy issue for research

Dear Fran

I refer to your email dated 19 October and to your call today. I asked Mary Simpson, one of our Senior Lawyers to consider the matter. Based on her advice set out below, I consider your research would be consistent with the Information Privacy Act.

I wish you all the best with your research.

Regards

Natalina

Natalina Velardi

Director Governance, Risk, Legal, Records & Compliance

Office of the DVC (Corporate Affairs, Knowledge Exchange & International), Victoria University

Phone +61 3 9919 9550 Mobile 0402 080 911

Email natalina.velardi@vu.edu.au

From: Mary Simpson
Sent: Tuesday, 23 October 2012 5:06 PM
To: Natalina Velardi
Cc: Legal Services
Subject: Re Privacy issue for research

Dear Natalina

Further to the request by Fran Newell for authorisation of her research project (attached), in my view the scope of the project is captured by clause 2(c) of Schedule 1 to the *Information Privacy Act 2000*, which provides that an organisation must not use or disclose personal information about an individual for a purpose (the secondary purpose) other than the primary purpose of collection unless—

(c) if the use or disclosure is necessary for research, or the compilation or analysis of statistics, in the public interest, other than for publication in a form that identifies any particular individual—

(i) it is impracticable for the organisation to seek the individual's consent before the use or disclosure; and

(ii) in the case of disclosure—the organisation reasonably believes that the recipient of the information will not disclose the information;

In light of Ms Newell's undertaking that the relevant records will be de-identified and not disclosed, the proposed research appears to be appropriate.

Regards

Mary

Mary Simpson

Senior Lawyer

Risk, Legal, Records and Compliance Services, Victoria University

Phone: 61 3 9919 5280

Email: mary.simpson@vu.edu.au

Appendix B: Ethics approval

From: Quest NoReply

Sent: Wednesday, 21 November 2012 2:22 PM

To: Kitty TeRiele

Cc: Robin McCormack; Fran Newell

Subject: Ethics Application - Approved

Dear ASPR KITTY TE RIELE,

Your ethics application, 'Tertiary preparation courses: A study of their role in student learning journeys and epistemological development', Application ID HRE12-307, has been accepted and deemed to meet the requirements of the National Health and Medical Research Council (NHMRC) 'National Statement on Ethical Conduct in Human Research (2007)' by the Victoria University Human Research Ethics Committee. Approval has been granted for two (2) years from the approval date; .

Continued approval of this research project by the Victoria University Human Research Ethics Committee (VUHREC) is conditional upon the provision of a report within 12 months of the above approval date or upon the completion of the project (if earlier). A report proforma may be downloaded from the Office for Research website at: <http://research.vu.edu.au/hrec.php>.

Please note that the Human Research Ethics Committee must be informed of the following: any changes to the approved research protocol, project timelines, any serious events or adverse and/or unforeseen events that may affect continued ethical acceptability of the project. In these unlikely events, researchers must immediately cease all data collection until the Committee has approved the changes. Researchers are also reminded of the need to notify the approving HREC of changes to personnel in research projects via a request for a minor amendment. It should also be noted that it is the Chief Investigators' responsibility to ensure the research project is conducted in line with the recommendations outlined in the National Health and Medical Research Council (NHMRC) 'National Statement on Ethical Conduct in Human Research (2007).'

On behalf of the Committee, I wish you all the best for the conduct of the project.

Secretary, Human Research Ethics Committee, Office for Research

Appendix C: Email invitation to participate in interviews

GATEWAY TO NURSING STUDENTS – 2009

Date:

Dear

I am a Victoria University research student who is interviewing 2009 Gateway to Nursing students.

The purpose of my study is to ask former Gateway to Nursing students about their beliefs about knowledge: For example, is knowledge certain? Can knowledge change? More information about the project is attached.

I would like to interview you about your ideas about knowledge and how people know things.

Where: Victoria University, or another place that suits you

When: Please contact me to arrange a time and date to meet

If you have any questions about the research or to arrange an interview, please contact me:

Phone: 0498 489 066

OR

Email: fran.newell@vu.edu.au

After the interview, you will receive a \$20 gift voucher to cover any expenses involved in participating in the interview.

Looking forward to hearing from you.

Regards

Frances Newell

PhD student

Victoria University

0498 489 066

Appendix D: Information sheet for participants

INFORMATION FOR STUDENTS OF GATEWAY TO NURSING - 2009

About a research project called

Patterns of knowledge and knowing: The personal epistemologies of tertiary preparation students

By: Frances Newell (a PhD student at Victoria University) and
Kitty te Riele (research supervisor and Associate Professor at Victoria University)

What is this research about?

- Student beliefs about knowledge. For example, is knowledge certain? Can knowledge change?
- How do students gain knowledge? For example from experts? From experience? From community leaders?
- Are there different types of knowledge e.g. nursing knowledge and knowledge about values or everyday life?
- Do beliefs about knowledge and knowing change as a result of education?

What will I be asked to do?

- We would like to interview some former 2009 Gateway to Nursing students about their views
- You do not have to take part - you are free to decide whether you would like to be interviewed, or not
- If you would like to be interviewed, the interview will take about 1 hour and we will audio record it (or take notes, if you prefer)
- You will be asked to talk about your views and write a short statement about a general interest topic.

What will I gain from participating?

- You will be given a \$20 gift voucher to cover any expenses involved in travelling to a Victoria University campus or a local community centre for an interview
- You may find it interesting to be interviewed about your views
- You will help us to understand student views. This in turn may help Gateway to Nursing and other similar programs to improve program outcomes and assist course coordinators and teachers to better respond to the needs of future students

What will you do with the information I give you?

We will use your views (and the views of other former students and information from Gateway to Nursing records) to understand the student point of view and how this can help teachers to better understand students. We will use our findings in:

- A student research project as part of a PhD
- Articles and conference papers on topics about student views on knowledge and knowing.

When we write about our research we will refer to Gateway to Nursing, but we will not use your real name in any publications. Instead, we will use a pseudonym of 'fake' name for you.

Appendix E: Ethics consent form for participants

CONSENT FORM FOR GATEWAY TO NURSING STUDENTS - 2009

RESEARCH PROJECT:

Patterns of knowledge and knowing: The personal epistemologies of tertiary preparation students

INFORMATION TO PARTICIPANTS:

We would like to invite you to be a part of a project to find out about:

- Student beliefs about knowledge. For example, is knowledge certain? Can knowledge change?
- How do students gain knowledge? For example from experts? From experience? From community leaders?
- Are there different types of knowledge e.g. nursing knowledge and knowledge about values or everyday life?
- Do beliefs about knowledge and knowing change as a result of education?

The research involves a 1 hour interview including a short piece of writing. The research is low-risk because it treats you as someone who has personal experience of the topic who we can learn from. However, it is possible that you might find the interview process upsetting or that you might not want to meet up with other program participants or staff.. Please read the information sheet for more details or let us know if you have any questions.

CERTIFICATION BY PARTICIPANT

I, _____ [Write your name]

of _____ [Your town/suburb]

agree that I am at least 18 years old and that I am voluntarily agreeing to participate in the study: *Patterns of knowledge and knowing: The personal epistemologies of tertiary preparation students*

being conducted by: Associate Professor Kitty te Riele and Ms Frances Newell from Victoria University.

I agree that:

The research project has been fully explained to me by Frances Newell

I have had the opportunity to have any questions answered

I freely agree to participate in a 1 hour interview including a short piece of writing. The interview will be audio recorded

I understand that I can decide to stop taking part at any time before the research results are published and that this will not have any negative consequences for me, and

I know that my information will be kept confidential.

Signed: _____

Date: _____

Please feel free to contact Kitty with any questions about the project. Contact:

Associate Professor Kitty te Riele. Email: kitty.teriele@vu.edu.au Phone: 9919 4132

If you have any queries or complaints about the way you have been treated, you may contact the Senior Ethics Officer (Secretary), Victoria University Human Research Ethics Committee, Victoria University, PO Box 14428, Melbourne, VIC, 8001 or phone (03) 9919 4461.

Appendix F: First and final lists of codes

1. Codes derived from first reading of writing tasks (*Codes in italics discarded*)

Nature of material used to support argument

- Personal experience
- General facts/info
- Concepts or abstractions (rights / dreams)
- Mix of evidence

Nature of argument

- Concrete
- Conceptual / abstract
- Pragmatic
- Principled / rights based
- Both
- Refers to relations between things

Indicators of epistemological assumptions

- Use of third person
- Use of first person singular
- Use of first person plural
- Exploration of links between things
- Inclusion of compromise position between alternatives
- Specification of a value position to justify an argument
- No hint of writer's values or any personal quality
- Inclusion of similarities as well as differences
- Inclusion of detail and definitions
- Doxa. Common belief or popular opinion
- Speaking on behalf of others
- Adjectives / phrases convey writer's values / connection / evaluation
- Writing task includes reference to an authority
- Author distinguishes between theory and practice
- Paradox - things are not what they seem
- Author acknowledges change
- Sense of personal agency
- *How to categorise an argument that is conventional wisdom?*
- *Insufficient evidence to ascribe an epistemological. position*
- *Health as a public issue*
- *Health as an individual issue*

Text features

- Pronouns: First person, second person, third person or ambiguous
- Conversational / Oral style
- Low personal organisational skills

- High level planning & organisation skills
- Self-reflection
- Moves from academic essay to reasons for applying for HSF
- *Vocabulary & sentence construction*
- *Ideas are more complex than writing allows*
- *Vocabulary: Simple, Moderate, Sophisticated*
- *Familiarity with essay conventions*
- *Structure – Introduction, middle, end. High Medium Low*
- *Essay structure replaced by answers to sub Qs in topic*
- *Stream of consciousness*
- *Unfamiliarity with term 'compare' in an essay*
- *Limited written expression*
- *Rich vocabulary & complex ideas*
- *No understanding of prior learning required for HSF*
- *No understanding of purpose of writing task (course selection)*

2. Final list of codes i.e. codes from first reading that were retained / refined / elaborated and sorted by signposts

Source:

- Use of first person plural by author to identify herself with authority or a collective
- Use of first person to convey lived experience
- Occasional use of first person to convey personal opinion
- Use of first person in the form, 'I believe something' rather than use of first person to introduce lived experience
- Use of first person as a device to order information in a writing task e.g. in the form 'I will compare x and y'
- Third person or ambiguous pronouns are mainly used in the writing tasks
- Frequent use of third person pronoun
- Use of the third person to establish that the view being presented is a general view, not a personal opinion
- Use of third person to emphasise otherness / distance from knower
- Reliance solely on impersonal information
- Reference to an external authority in a writing task that implies that knowledge is received from authority figures
- No explicit reference to a source of knowledge
- Abstract principle as a source of authority
- Writer's confidence in own opinion
- Writing task gives individuals authority to make decisions
- Lived experience supports rhetoric of choice
- Vividness of expression that speaks of lived experience e.g. conversational tone to the writing task
- Writing task has a dispassionate tone

Certainty:

- Absolutist / single vantage point
- Single vantage point of lived experience
- Multiple vantage points – often expressed categorically
- Multiple vantage points taken into consideration
- Vantage point in writing task inherently validates difference
- Categories are set up as dichotomies, as black and white
- Non-dualistic descriptions
- One vantage point is rated more highly than another

Justification:

- Uncritical valorising lens
- Unexamined acceptance of evidence
- Enactment of unexamined knowledge
- Belittling strategies e.g. use of negative / emotive terms to dismiss alternatives
- Exclusion of consideration of contradictory material
- Direct correspondence between cause and effect is implied in the text
- Rhetorical questions
- Principle of rights illustrated by lived experience
- Argument based on abstract principle of rights
- Lived experience proffered as evidence
- Advocacy on behalf of self or others based on lived experience
- Use of empathy or imagination to understand another point of view
- Differences identified but not resolved
- Identifying common threads in diversity
- Compromise or pragmatism
- Writing task contextualises discussion of a specific issue in a broader context
- Systematic procedures for evaluation
- Enacting methodical decision-making

Structure:

- Everything can be accounted for within a single framework
- Particulars are recorded atomistically
- Accumulation of details or assertions devoid of an interpretative structure
- Knowledge is personal and particular
- Narrative structure
- General propositions
- Changeable and evolving
- Flexible
- Implied hierarchy of information
- Writing task focuses on relations between reported phenomena
- Concrete information
- Concepts (rights and dreams)– nature of the material

Appendix G: Sample hand-written 2009 writing task - Hurriyet

Appendix G: Sample hand-written 2009 writing task

Certificate IV in Health Science Foundations

Interview - Writing Task (20 minutes)

Choose one of the following topics and write a response. Your response should be at between one and two pages (about 200-250 words). It should be written as an essay.

You will be assessed on essay structure, logical expression of ideas, grammar, spelling, punctuation, sentence structure, grammar and range of vocabulary.

1. Consider some of the major changes that have taken place in the world in recent years. Describe one of these changes. Discuss whether the change has been beneficial.
2. Compare Australia's health care system with the health care system of another country.
3. Describe a positive or a negative learning experience. Explain what you think makes effective learning.
4. Women should stay home and look after the children while their husbands go out to work. Discuss this statement.

Technology is being a major change in today's world that we are living in. If we go back ~~and~~ fifty years, they didn't have the technology that we have today. Computers, machines, basically a lot of things that we have today.

Computers are ~~very~~ very beneficial, most students use them for doing their home work and a lot of other.

When there is a lot of good advantages for having a computer and. However, there is always an disadvantage. age.

Young people are ~~more~~ wasting their time ~~using~~ on their computer, playing games, MSN, and a lot more.

(2)

So young people are having problems
losing weight, this is because
they don't exercise as much as
they should do.

Also another disadvantage would be
there is machines in shopping centers,
eg in Big W, and Sainsbury there is
machines that you go and put your
stuff you want. That means people are
losing their jobs.

I personally think that it is good
that we have all this technology
but it would be really good if they
can stop going to far, but because
it can cause alot of problems in
our world that we living in.

Appendix H: HSF students 2009

Overview of participant characteristics by epistemological lens (participants identified by study number), N=76

Highlighted study numbers are interviewees: Semester 1 students - 8 Faith; 16 Pavathi; 39 Meshell and 40 Assunta; Semester 2 students - 44 Hurriyet; 47 Emilio; 69 Liz and 75 Rosa

Demographic Characteristics	Epistemological lens						No. per characteristic
	Champion knowing	Passive knowing	Experiential knowing	Individualistic knowing	Evaluative knowing	Tentative (inclusive)	
Born prior 1988 No. needed if 13 students interviewed	1	1	2		1	1	
Students in this category x student no	54, 59, 60, 62,72,82	46,17,18,19,21,50,22,48	12, 31, 32, 1, 25, 51, 29, 11, 45, 36, 16	66,83		28,55,57,2,41	1
Born in or post 1988 No. needed if 13 students interviewed	1	1	2	1	1	1	
Students in this category x student no	64, 33, 47 , 73,26, 52, 75 , 81	35, 4, 8 , 53, 74, 84, 68, 34,37	78, 76, 30, 9, 7, 3, 49, 58	69	70,79,67,63,77,,20,13,14, 38, 42, 69 , 39 , 40	61,65,71,80,23, 44	7
ESL study and/or LOTE specified. No. needed if 13 students interviewed	2	1	2		2	1	
Students in this category x student no	54, 59, 60, 64, 47 , 73,26, 52, 75 , 81,	35, 46, 17, 4, 8 , 53, 74, 84, 18, 19, 21, 50, 34,37	78, 12, 31, 32, 9, 1, 25, 51, 7, 3, 45, 49, 16	0	79, 63,77, 20, 13, 39 , 40 , 14	80,28,55,57, 44 , 2, 23	7
ESB - No. needed	1	1	1		1	1	
Students in this category x student no	33, 62, 72,82	68, 22, 48	76, 30, 29, 11, 36, 58	66,83,69	70, 67, 38,42, 69	61,65,71,41	1
Completed Year 12 in Australia No. needed if 13 students interviewed	1	2	2		1	2	
Students in this category x student no	54, 59, 47 , 73,26, 52, 75 , 81, 33,62,82	35,46,17,4, 8 ,53, 74, 84, 68, 3437	78, 76, 12, 31, 32, 9, 3	66,83,69	70, 67, 77, 14, 42, 69 , 39 , 40	61,65,71,28,55, 57, 44	7
Non completion Year 12 No. needed if 13 students interviewed	1	1	1		1	1	
	60, 64, 72	18,19,21, 50, 22, 48	30, 1, 25, 51, 7, 29, 11, 45, 49, 36, 58, 16		79,63, 20, 13, 38,	80,2,23, 41	1
Total							8

Overview of interviewees (N= 8) by characteristics by epistemological lens (frequency of occurrence)

Demographic Characteristics	Champion knowing	Passive knowing	Experiential knowing	Individualistic knowing	Evaluative knowing	Tentative (inclusive)	Total participants per characteristic
Born prior 1988			1				1
Born in or post 1988	2	1			3	1	7
ESL study AND / OR LOTE	2	1	1		2	1	7
ESB					1		1
Completed Year 12 Australia	2	1			3	1	7
Did not complete Year 12 Australia			1				1

Representative sample of 2009 writing task topics for 13 interviews compared with actual 2009 writing tasks for 8 interviews

Topic	Representative sample	Actual
Compare Australia's health care system with the health care system of another country.	5	3
'Women should stay at home and look after the children while their husbands go out to work.' Discuss this statement.	5	2
Consider some of the major changes that have taken place in the world in recent years. Describe one of these changes. Discuss whether the change has been beneficial.	1	1
Describe a positive or negative learning experience. Explain what you think makes effective learning.	1	0
How has your day been so far?	1	2
The media and federal government are focusing on obesity as a major health issue in Australia. What are the major causes of obesity and what are some of the possible effects of obesity on the health of individuals?	0	0

Appendix I: Interview schedule for study (March 2014)

Information for participants

The interview will start by asking you about your earlier life, your life now and what experiences have influenced you. Next, I'll ask you to write a short statement about an issue in the media. Then I will ask you about how you know things and how you decide between different points of view. Finally, if you'd like to read something you wrote in 2009, I'll ask you how your views have changed or not changed. I'll end by asking you whether there is anything else that you would like to say.

Commencement of interview:

'Welcome, and thanks for volunteering to participate in this interview. The purpose of my study is to ask former Certificate IV in Health Science Foundations (HSF) students how they know what they know, and how they decide what's true. I've asked you to participate in this study because you applied for the HSF course at [name of university] in 2009. The purpose of the interview, however, is not to find out about HSF, but to find out about students' views about knowledge. Part of my preparation for today's interview was to read all the HSF applications and selection interviews including your own. So, to begin, let's go back to 2009.

BACKGROUND

Question 1: Life in 2009

'Could you please start by telling me about yourself at the time that you applied for HSF?'

Question 2: 'Turning to the present, could you please tell me about yourself and your life now.'

Question 3: 'Thinking about the last few years, what is the main thing that stands out for you?'

(Prompt if question not understood: 'Thinking about the last few years, what's been most important for you?')

Question 4: Looking back, what experiences have shaped the way you see things?

WRITING TASK

Question 5: Now, I'd like you to do some writing. Could you please select a topic from the list and write a few paragraphs?

[Give interviewee the same selection of topics that they were given in the 2009 HSF selection interview. If necessary, offer the option of writing about, 'How's your day been so far?']

Question 6: Thanks for writing this short statement. Before we move on, would you like to say what stands out for you about the topic that you wrote about?

Prompts if question not understood:

(a) Would you like to say what is most important for you about the topic that you wrote about? OR

(b) 'Is there anything else about the topic that you would like to say?

7. Source of knowledge

Question 7.1: Where do your ideas on this topic come from?

Prompts depending on topic: Your family, experience, a teacher, an expert, the media, religion, your values?

Question 7.2: Thinking about knowledge in general, where do you mostly get your knowledge? (Prompts as in 7.1 if needed)

Question 7.3: Now I'm going to ask you about experts. What makes a person an expert? Are there different types of experts?

Question 7.4: Can you give me an example of when an expert has helped you find an answer?

Question 7.5: What about personal experience? Can you give me an example of something that you know based on personal experience?

Question 8: Agency

Question 8.1: Sometimes people talk of "putting their beliefs into practice." Have you ever put your beliefs into practice?

Question 8.2: In general, do you rely more on (depend more on) expert opinion, personal experience or something else when you really want to know something?

(Brownlee, p.290, 2001, Appendix 1: Interview Questions)

(Brownlee's question adapted from Belenky et al., Appendix A – Interview Schedule, p.235, 'In learning about something you really want to know, can you rely on an expert?')

Question 9: Certainty

Question 9.1: Can you be sure of your view about a topic? Could your views about a topic change?

Question 9.2: Do you agree with people who say that where there are no right answers anybody's opinion is as good as another's?

Question 9.3: Can you think of an opinion that you think is wrong?

Question 10: Discernment

Question 10.1: If you're uncertain about something, how can you find an answer?

Question 10.2: Sometimes people talk about "searching for truth." Have you ever searched for truth?

Question 11: Reading

Now, if you're interested, I'd like you to read something you wrote in 2009.

[Give interviewee their 2009 writing task].

Question 11.1: Reading what you wrote, what stands out for you?

Question 11.2: Would you answer this question the same way today? What would be the same or different?

Question 11.3: Well what stands out for me about your 2009 writing task is ...
Would you like to comment on what I've just said?

Question 12: Is there anything else you would like to say?

THANK YOU

Appendix J: 2014 Interview writing task

Interview – writing task

(10 minutes)

Choose **one** of the following topics and write a response. Your response should be about one page (about 200 words). It should be written as an essay.

You will be assessed on essay structure, logical expression of ideas, grammar, spelling, punctuation, sentence structure, grammar and range of vocabulary.

1. Consider some of the major changes that have taken place in the world in recent years. *Describe one of these changes. Discuss whether the change has been beneficial.*
2. *Compare Australia's health care system with the health care system of another country.*
3. *Describe a positive or a negative learning experience. Explain what you think makes effective learning.*
4. *Women should stay home and look after the children while their husbands go out to work. Discuss this statement.*
