Informing Research: Art and Design Practitioner Researchers Engaging with Information

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Informing Research: Art and Design Practitioner Researchers Engaging with Information

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Abstract

This phenomenographic study investigates the information engagement practices of experienced art and design practitioner researchers working in university contexts, with the key aim of contributing to developing the information engagement capabilities of novice practitioner researchers. The investigation takes a relational approach that focuses on relationships between particular social practices and the contexts within which they occur. Accordingly, consideration has been given to contemporary political and economic pressures on university research and on the position of art and design practitioner research within that context. In keeping with this relational perspective, phenomenographic interviews garnered data from 28 art and design practitioner researchers working in Australian universities. Findings from the data analysis include six qualitatively different ways that art and design practitioner researchers experience information engagement. For librarians working with novice researchers, these findings provide examples of effective information engagement that extend beyond the perspective of information literacy standards. For curriculum developers, these findings highlight possibilities for using information engagement development to encourage art and design students to self-identify as researchers at earlier stages of their study. For administrators seeking to provide evidence of graduate attribute development, these findings show practical connections between ongoing student inquiry experiences and the development of attributes associated with independent research and self-directed practice.

Dedication

This thesis is dedicated to my mother June who always encouraged me to be curious.

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Conference Papers Arising from this Research

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Blackmore, M. (2012). *Is being, or not being, the only question? – The dilemma of practitioner-research in Australian universities.* Paper presented at the ARLIS/ANZ 2012 Conference Collaborations: artists, scholars and libraries in a research ecosystem, NGV, Melbourne, September 6-8, 2012. Available from: https://www.academia.edu/2049530/Is_being_or_not_being_the_only_question_-_The_dilemma_of_practitioner_research_in_Australian_universities

Blackmore, M. (2010). *Dimensions of awareness: Art and design researchers and information engagement*. Paper presented at the Curtin Humanities Tenth Graduate Research Conference: Creative Margins. Perth, November 5-6, 2009. Available from: http://hgsoconference.curtin.edu.au/previous/2009_proceedings_list.cfm

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This study into the different ways that university-based art and design practitioner researchers engage with information to inform their research practices came about as a consequence of my work as an academic librarian over more than two decades. Much of that work has been associated with helping art and design researchers to access and utilise information needed. Although many of these individuals were experts in art or design, most were undertaking their first university research projects. Because of their widely diverse subject interests and many different research approaches, working with artists and designers can be challenging. I found those challenges enjoyable and in retrospect, can see that the intellectual stimulation of that work played a large part in my decision to undertake this study.

Sometimes artists and designers embarking on university research for the first time talked to me about their frustration and confusion with the processes expected by the university, which they saw as quite unlike their usual modes of enquiry. When facilitating new researchers' information use, I always sought to introduce them to information processes that were related to those they were already using. Often however, new researchers experienced difficulty trying to explain their usual ways of accessing and using information because these processes tended to happen in largely tacit ways not easily described. Finding ways to tap into these types of tacit understandings was another major impetus for this research.

Perhaps the most memorable motivation for this research occurred many years ago during a conversation with a painting professor. I had been trying to persuade him that information literacy instruction would add value to his studio classes, but he had remained unconvinced. During that conversation the professor asked me why it was that information always had to be about the written word. I don't remember my answer exactly, but it was one of those 'aha' moments for me because I realised that my suggestions for information literacy instruction, informed by information literacy standards, *were* very focused on the written word. Although I failed to convince the professor that day, our conversation started me on a search for approaches to information literacy instruction for studio students that were less focused on written words. That search, at first informally and later in more formal ways, was the genesis of this study.

While I am a librarian and want to apply the results of this research to the practice of librarianship, thinking about that conversation with the painting professor made me more

aware of how group membership—in my case as a librarian—filters what we see, and how this can hinder understanding the practices of others. In terms of this research, this growing awareness influenced my attempts to clarify, but also to step away from my usual perspectives, so that the context of artists and designers working in universities could be more effectively considered. In an attempt to do this, I reviewed literature that explored various perspectives of university research in general and also the specific role of art and design practitioner research within this larger field of inquiry. Reading, thinking and writing about the impact of reform on the Australian higher education system and how this reform has affected research and researchers, provided an alternative perspective to that gained through personal experience. I began my academic library career in the early 1980s at Alexander Mackie College of Advanced Education. Quite soon after I started working at Alexander Mackie, that college was amalgamated with the Sydney College of Advanced Education, and I was still working there when it was later absorbed into the University of NSW. Reading about those amalgamations in articles written at the time and also in later critiques has augmented my own memories, providing me with a much wider perspective on all that happened then. That somewhat revelatory process shows personal involvement having a filtering effect, whereby some aspects of events are clearly seen at the time, whilst other important aspects are obscured from personal view. Often, and certainly in this case, it is only by looking retrospectively, and through the perspective of others, that important historical connections can be made.

The literature review undertaken for this study has covered three different but interlocking content areas, looking at university research in general, at art and design practitioner research within universities and at previous studies into the ways that artists and designers use information. Reading Christine Bruce's 1997 book *Seven Faces of Information Literacy* introduced me to the phenomenographic approach and reading further about studies using this approach provided me with ideas for gathering and analysing interview data from art and design practitioner researchers. Through my reading and through thinking about my reading, I realised that overall, I was becoming a relational thinker, in the sense described by Osterlund and Carlile, whereby understanding a particular social practice only becomes possible when the "relational interdependencies between subject and object, person and world" are taken into consideration (2003, p. 7). The phenomenographic approach is itself relational, because it specifically focuses on interconnecting relationships between practitioner researchers and phenomena of interest. In this study, a focus on relationships means that *what* these

researchers use to inform their research is of less interest than the ways that they *experience* the informing of their research. The relational perspective links otherwise diverse scholars such as Ference Marton (educational researcher and founder of phenomenography), Michael Polanyi (economist and philosopher) and Pierre Bourdieu (anthropologist, sociologist and philosopher), all authors whose research has guided and informed this study. But I have also benefited from the insight and wisdom communicated by many others, and whilst not all of these are cited and not all have communicated their ideas via words, they have all contributed to my beginning to think relationally.

Research Aim and Scope

This study explores the ways that university-based practitioner researchers, working in art and design, experience information engagement in their research practices. By expanding understanding of this type of information engagement, this research aims to increase the effectiveness of information assistance and developmental opportunities provided for novice practitioner researchers. The study takes a relational approach to explore impacts of the general university context on individuals working within it and also a phenomenographic approach to identify a range of different ways that a selection of these individuals (art or design practitioner researchers) experience information engagement.

The intention of stepping back from a library perspective to better understand other viewpoints has already been discussed in terms of contexts within which artists and designers research. Avoiding use of the term information literacy when talking to the researchers was another strategy employed. To explore all activities (i.e. not only library use) associated with informing research I wanted to avoid using that phrase because in academic contexts it is strongly associated with library use. Instead, I chose to use the phrase "information engagement", which in the context of this study encompasses any *thing* or *process* that is used to inform research. Information engagement emphasises the active involvement that occurs when a person is informed by a thing or process. It should be noted that using information engagement to describe the informing of research does not reflect a belief that everything is information, as variously suggested by Davies (2010), Floridi (2011) and Wheeler (1990). Rather it suggests that although any thing or process *might* inform research, the actuality of informing depends on the active involvement of someone engaging in some way with the thing or process.

As the research of artists and designers is often informed in ways that are embedded in other aspects of their work, they may not themselves ever use the word information. For example, the artist studied by Sandra Cowan (2004, p.19) rejected the word because it sounded "too technical." In this study, I chose to use the phrase information engagement because it seemed to encapsulate the idea of research being informed through the active engagement of researchers. Although the pre-interview information did tell researchers of my interest in information engagement, in the actual discussions we usually talked about how their work was informed. Details about the interviews, question structure, etc., are provided in Chapter 4.

I should also clarify my use of the descriptive phrase "practitioner researcher" throughout this thesis. Through my reading (discussed in Chapter 2), I discovered artists and designers researching within universities were using a variety of terms to describe their profession and research. Rather than choose any specific one, I opted to adopt the more general term, art and design practitioner research. In this study practitioner research corresponds with Sullivan's description of academic inquiry that is "focused on, and centered in, creative practice" (2007, p. 1191) and participants were selected on the basis of their involvement in that type of research within universities, regardless of whether they personally describe themselves as practitioner researchers.

The 29 practitioner researchers interviewed for this study were at various stages of completing research degrees or undertaking research as academic staff in universities. The outcomes of this study aim to represent "the full range of possible ways of experiencing the phenomenon in question, at this particular point in time, for the population represented by the sample group collectively" (Akerlind 2005d, p. 323). Akerlind also adds a qualifying comment that despite having the capacity to make "a substantial contribution to our understanding of a phenomenon", phenomenographic outcomes are still "inevitably partial, with respect to the hypothetically complete range of ways of experiencing a phenomenon" (p.323).

Method

As already mentioned, this study employs a relational perspective. In Chapters 1 to 3, Pierre Bourdieu's concepts of field, capital and habitus are utilised for the purposes of chapter summation. Because these concepts are designed to simultaneously expose both collective and individual actions, they are useful for highlighting interconnections between practitioner researchers and various elements of the wider environment within which they work.

The phenomenographic approach used for data gathering and analysis also involves a relational stance. Unlike the review chapters that move from broad to narrower considerations, phenomenographic analysis begins with individual meanings before expanding these into broader collective structures. Phenomenography focuses on the relationship between individuals and particular phenomena being experienced, in this case the relationship of practitioner researchers with information engagement. At individual levels each person is obviously unique, but focusing on differences in how individuals experience the same phenomenon enables researchers to identify structures that represent the critical ways that a particular phenomenon might be experienced. By simultaneously incorporating variation and commonality, the phenomenographic approach provides increased potential for practical application of research outcomes (Akerlind, 2005a, p. 71). This potentiality strongly influenced using the phenomenographic approach in this study.

Ethical Considerations

This research study complies with the general rules advocated by the *Australian code for the responsible conduct of research* (2007), a publication jointly issued by the National Health and Medical Research Council, the Australian Research Council and Universities Australia. In terms of research ethics, this study is considered to have low risk ethical impact as described on the UNSW website (http://research.unsw.edu.au/low-risk-ethical-impact).

As this study involved interviews I submitted a research plan to the UNSW Human Research Ethics Committee, and gained permission to proceed (06 2 119 – pilot study and 08 2 109 – main study). The main study permission was later extended (08 2 109 EXT). Prior to commencing the interviews, interviewees were provided with the questions, an information statement and a consent form (see Appendix 1). All consent forms were co-signed by me as the interviewer, the interviewee, and an independent witness. A copy of the consent form was provided to all participants and this form also included “opt out” instructions in case interviewees changed their minds at a later date. Interviewees freely participated and their contributions are very much appreciated and respected.

After completion of the transcriptions, participants were provided with a digital recording of their own interview and a (MS Word) copy of the transcript. Although reported research outcomes include transcript extracts, participant confidentiality has been maintained by numerical identification (rather than by name). Where participants discussed aspects of

generally identifiable work, those extracts were either not used or identifying aspects were removed (if statement integrity could be maintained). Copies of consent forms and interview transcripts will be retained in secure storage for the minimum retention period from the date the thesis is made publically available.

In terms of impact on the environment whilst undertaking this research, care has been taken to replace the use of paper by digital tools and resources wherever possible.

Thesis Structure

This thesis consists of two parts. Chapters 1 to 3 establish the context within which the study takes place and Chapters 4 to 6 present and discuss the phenomenographic study and outcomes. Chapter 1 begins the contextualisation by exploring social and political impacts on university research in Australia over the last few decades. The New Public Management (NPM) movement, influenced by neoliberal ideas about privatising public services, has significantly impacted higher education in most Western countries. All public services in these countries have been subject to ongoing reforms by governments focusing on NPM ideas about the importance of "transparency, comparability and consumerism" (Stensaker, 2007, p. 7). The significantly higher levels of regulatory reporting ushered in by these reforms aimed to open all aspects of higher education to increased government and public scrutiny, allowing comparisons between providers to inform consumer choice (p. 7). This commodification of higher education is discussed in terms of how it affects the parallel tasks of research and teaching and also how increased emphasis on competitiveness affects the availability of research funding. The gradual increase of practice oriented university research is another significant change representing a radical shift from previous ideas, in particular those of American economist and sociologist, Thorstein Veblen who believed considerations of practice would have "corrupting" affects on pure research (1957, p.19). These changes and others such as an increased interest in "Mode 2" research (Nowotny, Scott and Gibbons, 2003) are also discussed in this chapter. Finally, Bourdieu's ideas about higher education constituting a particular social field are used to summarise this chapter on university research.

Chapter 2 considers the specific position of university based art and design practitioner research. This discussion begins by looking back to events leading to Australian art and design colleges moving into universities and the upheaval caused by that process. As compared with university academics, those coming from colleges were less likely to have completed research

degrees and significantly less likely to have completed doctoral study. Art and design colleges moving into universities rapidly accelerated the completion of doctoral studies involving creative practice (Evans, Macauley, Pearson and Tregenza, 2003, p. 8). Despite many completions over the last few decades, tensions between the expectations of creative arts and design research and those of the academy continue to occur (Paltridge, Starfield, Ravelli and Nicholson, 2011). This chapter considers those tensions through discussion of debates about how art and design practitioner research should be described, the most appropriate research methods for art and design practice and how practitioner research outcomes should be evaluated and communicated. Finally, Bourdieu's concept of capital is used to summarise Chapter 2.

Chapter 3 examines previous studies into information use. Beginning in the 1970s, most of these studies have been undertaken by librarians or by students working within library and information science degrees. A review of these studies reveals an overwhelming emphasis on how artists and designers use *libraries* rather than on how they *inform their practices*. Even those researchers interested in more than just library use still tended to inquire into types of information needed and preferred ways of seeking it. By comparison, this study is primarily interested in how information engagement is experienced. Whilst it is acknowledged that types of information and ways of seeking will come up in any discussion about information engagement, this is of less interest than the engagement experience itself. All of these previous studies have however provided useful background information for this study.

Chapter 3 also discusses information literacy, in particular the origins of the term and the ways that, in higher education contexts, it has become generally synonymous with the effective use of libraries. Issues associated with interconnections between information literacy and generic competency development are also discussed in this chapter, as are previous studies of artists' and designers' information use that particularly considered information literacy development.

As many artists and designers inform their work in ways difficult to articulate, Chapter 3 also explores tacit knowledge, in that active sense defined by Michael Polanyi (1962) as tacit knowing. Polanyi's observation that "we can know more than we can tell" (1967, p. 4) is probably cited in most discussions of tacit knowledge, but his concept of tacit knowing is often used without due consideration for the complexity of his thinking about how it figures in the enactment of expertise (Tsoukas, 2003). Taking a multilayered approach, Gascoigne and Thornton (2012, p. 23) argue for Polanyi's tacit knowing being interpreted as a type of

“understanding in practice” or a form of “knowledge-how” and propose that such knowledge only becomes untellable when considered in “depersonalized, context independent terms” (p. 31). These insights suggest that understanding in practice, whether of a librarian or of an artist or designer, is both personal and context dependent.

Finally, Chapter 3 is summarised through the perspective of Bourdieu’s habitus, linking the predominance of library studies into information requirements and information seeking behaviour with a particular library-world habitus that acts to influence choice of research questions and the research methods chosen to explore them. Links are also made between the habitus of artists and designers and how this affects information engagement occurring within creative processes.

Chapter 4 turns to the study itself and is presented in two parts. The first discusses phenomenography as a particular research approach and the second looks at how phenomenography has been used within this study. The chapter commences with a general overview of the phenomenographic approach, from initial beginnings in Swedish educational research during the 1970s, looks at changes to the approach over time and the wide range of research projects now employing it. The ontological and epistemological assumptions of the phenomenographic approach are also discussed and a general outline of phenomenographic processes is provided. To avoid potential confusion with other research traditions also interested in awareness and experience, an explanation of how phenomenography differs from psychology and phenomenology is presented, followed by a discussion of weaknesses identified by critics of phenomenography and the strategies employed in this study to overcome these.

The second part of Chapter 4 focuses on the design of this study and on the discursive phenomenographic processes specifically utilised in this instance. An overview of the pilot study shows how interview questions were adapted for use in the main study. The main study population sample criteria and selection processes are described, as are the particular interviewing processes employed. Taking leave from full-time employment allowed me to undertake all the interviews and transcription myself, and most transcribing occurred quite soon after each interview was completed. This process allowed fine-tuning of future interviews (such as avoiding background noise, etc.). The reiterative data analysis processes are then described. In this study, data management software (NVivo) was used to organise the analysis process and the various NVivo options employed are discussed. This chapter ends by clarifying

my own role in this research in terms of my relationships with the phenomenon (information engagement), the participants and the resultant data.

Chapter 5 discusses the data analysis results, which constitute a set of six categories of description representing qualitatively different ways in which art and design practitioner researchers experience information engagement to inform their research and also a non-hierarchical outcome space. This chapter discusses each of those categories, which are illustrated and supplemented by extracts from interview transcriptions. Although non-hierarchical—in the sense of some categories of description representing more complex ways of experiencing than others—the outcome space derived from this study shows structural interconnections between categories.

Chapter 6 provides a recap of the overall thesis and then presents comparisons between the outcomes of this study and previous explorations into the information use of artists and designers. Although no previous studies are directly comparable, four studies did allow some comparisons to be made. Possible applications for the outcomes of this study are then discussed, in terms of librarians seeking to provide developmental opportunities for information literacy, curriculum developers seeking ways of introducing studio undergraduates to research processes and administrators seeking to ensure and provide evidence of graduate attribute development. This is followed by a consideration of future research possibilities before the chapter concludes with final comments on relational themes used throughout the thesis.

Chapter 1:
Research in a University Environment

As discussed previously, this study looks at the ways that art and design practitioner researchers experience information engagement, focusing in particular on the informing of academic research undertaken by students and staff within institutions of higher education. As also previously explained, the impetus for this study has come from examining my own practice of helping art and design research students to engage more effectively with information, which has obviously influenced the primary focus on university practitioners. Focusing only on information engagement within universities presents a potential paradox when it is considered that most students are preparing for careers outside these institutions, but is justified by other factors.

The first such factor relates to complexities in the ways that artists or designers establish their careers: for example, some may establish creative practices before attending university and some may never study at tertiary level. This may mean that these practitioners will engage with information in ways that are different from those used by artists who came to their careers through university study. Although an investigation into whether such differences exist may be interesting, it is beyond the scope of this particular study.

The second factor relates to time lags between university graduation and establishment of practices. Unlike graduates from professions such as medicine or law, artists and designers are unlikely to follow any type of structured career path. Commonly, careers in art or design are first supported financially, often for many years, through work in other professions; in fact, many artists and designers will *always* need to supplement their income from art or design by working in other professions. International studies (e.g. Menger, 1999) show this semi–and sometimes complete–immersion into alternate professions as a worldwide phenomenon, causing many art and design graduates to simply disappear from view. This means that except for those few who, through luck or exceptional talent, or a combination of both, become quickly famous, little is known about art and design graduates. National postgraduate studies (e.g. the Australian Graduate Survey) do provide some information, but are blunt instruments at best and unlikely to capture career information about creative graduates (McCowan & Wyganowska, 2008).

More disciplinary specific surveys of art and design graduates (e.g. Bridgstock, 2005; Daniel, 2010; McCowan & Wyganowska, 2008; Victorian College of the Arts, 2004) do provide slightly more descriptive data that confirms art and design graduates working for extended periods in either somewhat related or unrelated careers that leave little time for building art and design practices. Studies looking at the working lives of creative practitioners (e.g., Markusen, et al., 2006; Throsby & Hollister, 2003; Throsby & Thompson, 1994) also show clear evidence of financial and other challenges that must continually be managed; so although art and design graduates working in practices outside in the community may continue to engage with information in ways described by this study, a larger follow-up study would be required to ascertain that.

A third factor associated with focusing solely on university practitioner researchers relates to certain particularities within higher education environments. As will be further discussed in this chapter, these particularities create a work life that is, to some extent, distinctive to university researchers. Although activities, such as applying for funding grants, might continue to be required by community practitioners, many of the other pressures faced by university researchers are unlikely to be replicated outside academia. Whilst this assumption could again be tested by a comparative study, the ultimate aim in this study of helping research students to engage more effectively with information at university means that this is also beyond the scope of this work.

There are other less practical reasons that support this sole focus on practitioner researchers in universities, and these are embedded in ideas about what a university education ultimately is. Politicians may argue that a university education should first and foremost be vocationally directed; and there is certainly some merit in that; but the problem always encountered when preparing for future vocations is that the future is essentially unknown. Barnett argues that "the way forward lies in construing and enacting a pedagogy for human being … learning for an unknown future has to be a learning understood neither in terms of knowledge or skills but of human qualities and dispositions" (2004, p. 247).

As noted by Bannister and Fransella, university education is not just accumulating "more and more pieces of information, but the development of an increasingly complex structure for organising and interrelating ideas" (1986, p. 76). Preparing for work that is as yet unimagined is more likely to be accomplished by helping learners to gain more complex perceptual abilities, to increase innovative adaptability, so they are more able to work productively with

whatever circumstances arise (Bowden & Marton, 1998). From this perspective, students learn research skills not only for the purposes of particular disciplinary practices, but also to enable adaptability and resilience in rapidly changing worlds.

The university experience of information engagement may be different to that encountered in the community, but it is still possible to prepare students for differences arising. Indeed, it might be argued that preparation for specific occupations should always be secondary to an educational aim of learning to live productively with complexity, but that is a discussion for another time. The idea of productive responses to complexity does, however, conveniently segue into the relational perspective that underlies this study. Thinking relationally involves seeking interconnectivities, and this chapter begins this by exploring interrelationships between research and university environments. This outside layer, described by Usher, Bryant and Johnson (1997) as the "metapractice" and by Bourdieu (1977) as the "social field", is the particular terrain within which the research occurs. This chapter discusses social and political aspects of that terrain and the slow, almost begrudging, acceptance of practitioner research into academia, before framing these discussions within Bourdieu's (1977) ideas about fields of practice.

University Research: Social and Political Aspects

When Usher et al. (1997) talk about the metapractice of an educational practitioner they highlight the contextual nature of qualitative judgments. In the educational context they argue that there is "an educational practice and a metapractice about educational practice" (p. 140). For this study the metapractice involves ideas about "what education is, its aims and purposes, how it relates to the economy and society, the nature of the curriculum and of its transmission through teaching"(p. 140); therefore, educational practice is not judged only by educators, but is also subject to the opinions of students, parents, politicians, bureaucrats, businessmen, educational theorists and other researchers - all will have their say. Similarly, university research will ultimately reflect the social and political environments within which universities exist. This section explores some of the key issues impacting upon university research; government regulations, conflict between research and teaching, the commodification of higher education, and competition for funding at local and global levels.

Research and the Regulatory State

Modern universities are more than places of research, scholarship and learning; they are also sites of enterprise. Expansion of this enterprise role in universities across the Western world is the consequence of a shift from a traditionally civic service model that is based on increasing the possibilities and equity of education, towards a higher education business model that involves management of the production and distribution of education and research (English, Guthrie & Parker, 2005).

In Australia, corporatisation of higher education management started in the 1980s and was swept along by a tide of neoliberal ideas about the social destructiveness of welfare dependency, often described as the "crisis of the welfare state" (Peters, 2010). This neoliberal movement, known in Australia as "economic rationalism" (Sheehy, 2010, p. 13), prepared the way for extensive public service reforms, beginning in the 1990s and continuing today. These reforms were significantly influenced by ideas about "less rowing and more steering" promulgated by "new public management" (NPM) proponents (Osborne & Gaebler, 1992). Massive bureaucratic "machines" (Weber, in Fischer & Sirianni, 1984) that were effective in periods of slow social growth—such as the early twentieth century—became increasingly unable to meet social needs arising from changes wrought by the "information age" of the 1980s and 1990s. As faster rates of change began to redefine public perceptions of efficiency and effectiveness, the old bureaucratic structures became hopelessly bogged in the minutiae associated with providing both old and new types of services. Privatisation theorists (e.g. Savas, 1987; Osborne & Gaebler, 1992) widely influenced political decision makers to perceive viability in the argument for governments gaining flexibility, adaptability and efficiency by focusing less on '"rowing" (providing all the services) and more on "steering" (selecting and monitoring external service providers). In the 1990s this accelerated the privatisation of social services provision.

NPM reforms had wide reaching effects around the world, but Australia, the US and the UK were early adopters of privatisation ideas and as such led the way in marketisation and privatisation reforms (Walker, 2012). In these three countries, NPM reforms fundamentally changed relationships between public institutions, governments and society at large (Teisman & Buuren, 2007). For universities, as major educational service providers, the intense focus on "steering" steeply increased levels of regulatory and administrative reporting, not only to gain

and account for government funding but also to justify and maintain the hitherto undisputed position of universities as dominant providers of higher education.

Whilst universities have, in various ways, always been held accountable for public money received, NPM reforms intensified this scrutiny. Neave (1998, p. 269) outlines two traditional modes whereby governments previously evaluated higher education activities, which he describes as either routine or exploratory verification. Routine verification involved annual reporting of expenditure, enrolment figures, qualifications awarded, etc. and was most suitable to stable and slow growth social conditions: that is, to maintaining the status quo. This was a "steady as she goes" approach, resulting in few, if any, changes to organisational structures. Neave describes those few changes as "minor navigational adjustments", similar to ships slightly changing course" (1998, p. 269). Exploratory modes usually involved government appointed, short-term commissions or committees that investigated and reported on particular aspects of higher education deemed to be of concern. These committee reports might result in significant shifts of organisational direction, creating flurries of restructuring activity that would eventually settle down once the appropriate directional adjustments were made.

Wide development of mass higher education and the NPM rhetoric of "efficiency, adaptability and flexibility" brought forth a third evaluation mode (Neave, 1998, p. 273) that is a hybridisation of the earlier two. This happened when the frequency of routine verification was radically increased to the point whereby it resembled the activity levels required by the exploratory mode. In this third mode, occasional reporting became an ongoing, routine requirement. Quantification and reporting on all areas of higher education activities was increased, and student graduation rates, per capita cost, and departmental productivity began to be built into a more complex system described by Neave as "a highly sophisticated, judgmental mechanism, regularly applied, regularly reviewed" (p. 273). As a nominal concession to institutional independence and protection from government bias, evaluative bodies (e.g. the Australian Universities Quality Agency) were created as a conduit for reporting. This new mode also introduced new expectations around the idea of "contractualisation" (Neave, 1998, p. 276), which started to alter the privileged role of universities in providing higher education. Whereas once seen as symbols of national achievement, now universities became just another service provider continually having to prove their fitness for the task.

Levine (1999, p. 43) argues that the rationale behind the push for regulation and control of universities by governments throughout most of the Western world stems from perceptions of universities as "mature industries" requiring more regulatory control over productivity, efficiency and effectiveness than would be exerted on industries just starting out. As typical of the privatisation assumptions of the NPM model, higher levels of regulation and control—more steering—have unfortunately coincided with gradual decreases in government funding. For example, in 1990 almost all base funding for Australian universities was government provided, but less than a decade later this had reduced to an average of 30% (Guthrie and Neuman, 2007, p. 232). In fact rather than viewing universities as funding recipients, governments began to reposition them as potential sources of "wealth creation to be exploited" (Thornton, 2009, p. 19). The so-called "entrepreneurial university" (Clark, 1998) could be argued to be an outgrowth of this expectation.

This linking of higher education with market forces is seen by some (e.g. Thornton, 2009) as an erosion of traditional Humboldian values that view higher education not just as a process for producing an educated workforce but as a desirable public good in and of itself. Previously, government support for this type of "public good" was justified by the general belief that university teaching and research produced benefits that were "widely dispersed and payoffs not immediate" (Guthrie & Neuman, 2007, p. 232). Yet as Coaldrake (2001) has noted, the Australian higher education system has always been more vocationally aligned than, for instance, US or UK universities, so perhaps shifted more easily into this market driven role.

The 2010 Gillard Labor government's proposed inclusion of higher education in the "Jobs, Workplace Relations and Skills" portfolio seemed to underscore this notion of vocational preparation. The hasty renaming of that portfolio to "Tertiary Education, Employment and Workplace Relations" partly in response to negative reactions from university representatives, did little to allay suspicions that education as a public good is directly—and perhaps only—related to educating workers. This instrumental interpretation of education as a means for developing specific occupational skills, as opposed to a discerning and learned populace, has obvious implications for disciplines such as the arts that lack direct links to existing professions. At the individual level, increased regulation and control requires clear demonstrations of "performativity", a term used by Lyotard to describe the "optimisation of the relationship between input and output" (1984, p. 11). Proving optimal outputs involves measurement and comparison, which has led to the introduction of various evaluative programs by governments

around the world (e.g. in Australia, the Research Quality Framework (RQF) and the Excellence in Research for Australia (ERA) assessments).

Initiated by the Liberal/Country Party coalition, the RQF was dropped by Labor when they came to government in 2008, and replaced by a similar scheme, the ERA. In a press release the Hon. Kim Carr, then Minister of Innovation, Industry, Science and Research, described the ERA as a "streamlined, internationally recognised and transparent research quality assurance system" that would "provide hard evidence that taxpayers are getting the best bang for their buck in this critical area" (2008, online). The intent of both schemes is to monitor and measure university research, indicating that NPM reformist ideas have bipartisan political support. As compared to the RQF, the ERA increased the number of research categories and ways of quantifying outcomes. One of the changes welcomed by artists and designers involved new possibilities for exhibitions to be included as valid ERA research outcomes, raising hopes for "wider acceptance of practice-led outputs in the Australian research environment" (Green, 2006, p. 5); but many were also wary of this new scheme, particularly its potential for creating "narrowing or channelling effects" (Arup, 2008, p. 32) that might ultimately undermine research quality.

Nowotny, Scott & Gibbons have noted that performance measurement systems, even when scrupulously used, always affect the behaviour being measured (2003, p. 183). Brew talks about performance measurement systems requiring "the chunking of research in to bite-size pieces … [so] that they can be counted for a variety of purposes" (2001, p. 111). Longitudinal studies may be artificially broken into bounded projects that can provide evidence of outcomes to be separately reported and measured. Nowotny et al. see this potentially encouraging "industry-style" research production where predictable research results delivered on time are valued more highly than innovative results, delivered late (2003, p. 183). Long-term research activities that cannot be easily divided into discrete projects are particular losers when measured in these ways.

This process of manipulation and adaptation is of particular interest to Ball, who sees performativity structures contributing to university researchers having to "fabricate" themselves to manage and manipulate their performances in particular ways" (2000, p. 10). In order to progress, individuals must ensure research performances can fit efficaciously into the various impact assessment products, such as H Indexes, publication impact factor ratings schemes, and benchmarking studies of comparative researchers. This manipulation of research

activities, in particular the requirement to publish in ERA sanctioned journals, can hinder innovation, especially if researchers need to “eschew originality, in order to satisfy bureaucratic requirements” (Melleuish, 2011, online).

As relative latecomers to the university sector, studio art and design disciplines tend not to fit into the research impact infrastructures—primarily publishing—that have been established by more traditionally academic disciplines. This means that artists and designers often struggle to measure performativity in terms set by quite different research paradigms. Gray, for example, talks about the difficulties associated with promoting and defending art and design research projects “to a perplexed audience of ‘classical’ researchers” and her despair at the “apparent rigid and reductive frameworks of the predominant ‘scientific’ methods” (1998, p. 85).

Art and design research is not exempted from the NPM model of judging research quality in terms of marketability. Borgdorff, for example, talks about problems associated with researchers in the arts having to “sell their research as a credible endeavour” (2007, p. 19). Now art and design are repositioned as sub-sets of “creative industries” (Cunningham, 2006; Hartley & Cunningham, 2002; O’Connor, 2011). Conference speakers discuss how “creative work” can contribute to knowledge economies, and discuss ways of adapting creative research to optimise the capacity to apply “received indicators of quality and impact in the field of research and development – citations, grant income and so on” (Adkins, 2006, p. 2). The effect of adapting to the quality criteria of other research frameworks ultimately means that art and design researchers are expending energy trying to “catch up” with unrelated disciplines, as opposed to creating their own quality criteria. Sullivan notes the inherent danger of the creative arts sector actively constructing their own exclusion “by playing a game according to … rules that can only be changed by those who made them” (2005, p. 89).

For novice art and design researchers entering university, trying to fit into other disciplinary frameworks can be alienating, especially if they see that as eroding best practice research in art and design. Of course, this is a condition shared somewhat by other arts and humanities disciplines as highlighted in a study by Williams, et al., (2009) that finds, although highly valued, the disciplinary practice of monograph authorship is inadequately assessed by the UK Research Assessment Exercise (RAE) due to long publication cycles. One study participant went so far as to blame the RAE for the downturn in arts and humanities scholarly monograph publishing, as scholars shifted to writing several journal articles rather than one scholarly book.

Journal articles require less continuous work than a scholarly monograph yet they often generate higher RAE ratings.

Modifying research projects to ill-fitting assessment infrastructures also affects research diversity, with King suggesting that "curiosity-driven or basic and more individualistic" research is becoming a particular casualty (2004, p. 55). This type of assessment mismatch can inhibit, rather than encourage, quality research.

Commodification of Education and Research

In the early 20th century, universities were perceived as important sources of technical knowledge, as conduits for transmitting national culture providing "intellectual cognitive structures" conducive to the democratic aspirations of modernist states (King, 2004, p. 67). This was a privileged role that gave universities considerable autonomy, albeit monitored and maintained by various professional associations acting as intermediaries, via accreditation validation. Education qualifications gained through university study provided entry to professional associations who monitored professional standards and "assisted" the state to control graduate numbers, generally aiming to keep out the "cowboys" (p. 71). This control and the employment of professionals within universities gave professional associations substantial power over educational programs in universities. It was an era when the student, the "consumer" of educational programs, had little say about the content, the student voice being considered "unreliable and probably misinformed" (p. 71).

The power of professional associations began to diminish, not only because of scandalous activities duly disclosed by the media (Peters, 2010; Thompson, 2001) but also because mass higher education led to increasing competition for student enrolments. University students are now more likely to compare marketing rhetoric with their actual experience and to complain about mismatches. Expected to pay more for their education, students care about value for money and have different expectations of educational experiences. Where previous generations had little influence over the types of educational programs being developed, now Onsman notes "there is no doubt that students are amongst the most influential of all tertiary education stakeholders" (2008, p. 78).

Perceiving education in terms of getting value for money has implications for the ways that quality is measured. Grunig (1997, pp. 21, 22) compares two such models of quality

assessment, describing the first as a “talent development” model (e.g. Astin, 1985) that is expert driven and aims to provide opportunities for students to maximise their latent talent. In this model, quality is directly related to the availability of inter- and extra-curricular opportunities that enable talent development, with the student being primarily responsible for taking advantage of these. The second example is a “user-based model” within which quality is related to meeting—or exceeding—customer expectations (e.g. Seymour, 1992). This is primarily customer driven and links quality with user satisfaction. This second model tends to promote education as a purchasable product, shifting responsibility from the student to the university, which must provide the education for those who pay. This creates ambiguity about where the fault lies if a student fails to learn, as exemplified by the reported case of a disgruntled student petitioning the NSW Consumer Trader and Tenancy Tribunal to force his university to refund fees paid for a subject that he failed (Hare, 2013). Dissonance between expectations and perceived service quality has led to an increasing number of students suing universities (Helms, 2009; Kamvounias & Varnham, 2006, 2010; Onsman, 2008), with obvious implications for risk management in educational institutions. When combined with marketing pressures and global competition for enrolments, the idea of educational consumerism gains momentum. Students now expect more choice and control over what, and how, they learn. University marketing strategies now tend to be checked by legal advisers, to ensure that whatever is promised can realistically be delivered.

This “commodification” of education—and ultimately of knowledge—not only affects course design and student expectations but also bleeds through into the processes of university research. In Australia, a 1999 government report, *Knowledge and Innovation* accelerated processes aiming to situate university research into a more competitive framework with support from industry (Kemp, 2009). Encouraged by financial and other incentives, private consortiums and large companies now have greater involvement in university research, sometimes fuelling accusations of bias and also fostering suspicions about uncomplimentary research outcomes being suppressed (e.g., Adams, 2007). When research findings threaten commercial interests, corporations may direct substantial marketing budgets towards discrediting the messengers, as evidenced by the vociferous attacks that fossil fuel companies and conservative groups have made on mainstream climate change scientists over the last two decades (Dunlap & McCright, 2011). As government research funding increasingly becomes tied to gaining equivalent funds from corporate bodies, such ethical and conspiratorial issues are more likely faced by researchers from all disciplines.

Brown and Scott argue that commodification of higher education is a positive change that will effectively force universities to use “resources more efficiently” and to “limit activities to which academic staff attach importance but which may never have any broader value (2009, p.7). This is a view that becomes problematic if “broader value” is interpreted exclusively in terms of short-term economics, possibly excluding research that is initially unprofitable yet may produce enormous social or other benefits over time. For example, art therapy research, primarily a “continuous exploration of how creative activity influences people” (McNiff, 1998, p. 42), might be described as both non-economic and curiosity driven, yet has long term potential to alleviate mental illness that in Australia is estimated to cost around $190 billion a year, around 12% of the annual output of the national economy (Wade, 2013). History also shows many important discoveries being made serendipitously (see Roberts, 1989) as the consequence of “intelligent noticing” (Thomas, 1998, p. 152) occurring during explorations of more general questions. Aligning research too closely to instrumental goals not only decreases the chances of productive serendipity but also limits the flexibility required to follow potential leads. Perhaps ironically, by enabling only research that fits neatly into predetermined “broader value” categories, the potential overall value of research outcomes might actually decrease.

Of course, research also occurs outside universities, because as Barnett notes, it is a “plastic activity, conducted in many different sites beyond the university and taking many forms” (2000, p. 6). For example, in 2006, most research and development (R&D) within OECD countries was actually undertaken by private business concerns (Vincent-Lancrin, 2006). The level of publicly funded research undertaken in universities can also differ markedly between countries. In many European countries, for example, research is likely to be undertaken in specialist research institutions because universities “are considered too vulnerable to student pressures” (Castells, 2001, p. 208). In Japan, the government provides funding to the in-house research laboratories of many private companies, the outcomes of which are directly related to individual company profit (p. 208). Although touted as positively transformative for industry and, through that, for national economies, such research can also negatively affect national innovation by entrenching monopoly power (Courvisanos, 2006). For example, corporations with the financial capacity to undertake R&D might be also more likely to patent or otherwise restrict the sharing of research outcomes. Business interests may also suppress innovation if new ideas are thought to have potential to threaten short-term profits.

If perceived through the lens of marketability, art and design research is an interesting case in point. At one level, perhaps most of the research undertaken in art and design disciplinary areas would fail Brown and Scott's (2009) "broader value" test. At another level however, art and design research is possibly more likely to culminate in the production of ideas, artefacts or events that are ultimately commercially saleable and/or community inclusive. Nowotny points to a rapid expansion in the global consumption of artistic production—particularly in densely populated countries such as China and India—as evidence of an increasing "pull" of commercial markets on art and design (2011, p. xix). Despite art and design practitioners being notoriously "indifferent to the market" when pursuing aesthetic goals (Murphy, Peters & Marginson, 2010 p. 289), future economic potential has become increasingly likely to be factored into proposals for practitioner research in universities.

To exploit any market potential of research outcomes, most universities employ a business development arm to investigate commercial possibilities. As noted by Nowotny et al., this shifts the creation of knowledge for public benefit into a category of intellectual property that is "produced, accumulated, and traded like other goods and services" (2003, p. 185). Connell sees "there is a stark irony that universities set up for the advancement of knowledge now seek to *restrict* knowledge to extract a commercial benefit from it" (2013, p. 108; original italics). This emphasis on research outcomes as commodities has also influenced shifts in the perception of universities in wider society, which has sometimes manifested in forms of anti-intellectualism (Wacquant, 1996). Questions about appropriate uses of taxpayer money increases pressure on governments to regulate and monitor research activities, which can squeeze out research aiming for outcomes more nebulous, yet potentially more valuable, than short term market worth. As such, researchers are learning ways of re-articulating their goals so as to more clearly suggest potential economic benefits.

Relationships Between Research and Teaching

Discussion as to the relative importance of teaching and research often arises in academic environments. Questions are asked about whether research constrains or enriches teaching, and about whether teaching adds value to, or detracts from research, but there is little agreement on the answers. Perhaps the most telling example of the importance of teaching in higher education is provided by commonly used phrases such as "research opportunities" and "teaching loads". According to Keohane (2006, p. 66) these words underline the "undisputed primacy of research in the self-definition of the university" which she sees further supported

by university reward systems that provide time for research at the expense of teaching, clearly giving research higher status.

The inherent value of research to teaching—or vice versa—has also been the subject of many studies. In a comprehensive review of 58 of these studies, Hattie and Marsh find that the (then) cumulative evidence showed a zero relationship between teaching and research, despite anecdotal and other evidence suggesting otherwise (1996). They conclude that beliefs about complementarities between research and teaching persist only "because universities use research as an advertising lure, because academics use research outputs as a commodity and because most academics would like it to be true" (1996, p. 533). Another study undertaken six years later by Marsh and Hattie reconfirm these findings and make the additional claim that the separate functions of teaching and research are "independent constructs" (2002, p. 635). Not surprisingly, Marsh and Hattie's studies have been subject to criticism, in particular regarding how their studies were "conceptualised, organised and communicated" (Hounsell, 2002, p. 7). Fairweather (2002) argues that by narrowly defining teaching as only classroom instruction, Marsh and Hattie have excluded studies of alternative modes of teaching that are more complementary with research. Many academics also point to personal experience of complementarities between research and teaching. Hounsell, for example, comments that "to anyone with at least some first-hand experience of research universities, it seems perfectly plausible to view the nexus not as wholly desirable or wholly undesirable, but as having both advantages and drawbacks in any given institutional setting" (2002, p. 7). His opinion is that definitive proof requires more information and that the "most telling evidence is likely to be gathered from the bottom up, not top-down": that is, from teachers and researchers themselves. Griffiths (2004) also points to Marsh and Hattie ignoring disciplinary variations and cites research by Feldman, (1987) finding a stronger nexus between teaching and research in the humanities than in the sciences.

From a practical perspective, there are indirect ways that a research-intensive environment might benefit teaching programs: for instance, Keohane (2006) mentions the benefit of augmented library, laboratory and IT facilities. Hounsell (2002) cautions however that some research institutions may limit facility access by undergraduates. The presence of eminent researchers working within an institution may allow undergraduates more ready access to discussion of "cutting edge" ideas, but Hounsell also notes that such researchers are often time-poor and may have limited opportunities for engaging with students. The presence of innovative, world leading research in particular disciplines should, theoretically, feed into

teaching programs, if only to keep content relevant and up-to-date, but undergraduate curriculums would only benefit if cross-fertilisation possibilities were purposefully created. Employing research students as tutors is another potential resource advantage, both for undergraduate students—if the tutor is an effective teacher and research role model—and for the research students, who usually need financial support. Other possible research synergies could occur when research students work with undergraduates, but without appropriate support they might perceive teaching as distracting to their research.

Teaching can, then, enhance research—and vice versa—in both direct and indirect ways, but only when planned and provided for. The general absence of such planning might be why the studies reviewed by Marsh and Hattie (1996; 2002) found no beneficial interconnections. Advocates of the advantages that a productive research teaching nexus can bring (e.g. Boyer Commission on Educating Undergraduates in the Research University, 1998; Healey & Jenkins, 2009; Hounsell, 2002; Mockridge et al., 2009; Wareham, 2008; Willison & O'Regan, 2007) argue for undergraduate curriculums needing to be re-engineered to enable benefits to occur. Figure 1 presents research activities that have been shown to add value to existing curriculum frameworks. Healey and Jenkins (2009) argue that whilst many designers of undergraduate programs will have implemented activities in which students are an audience, most will not have found ways of implementing activities in which students are participants.

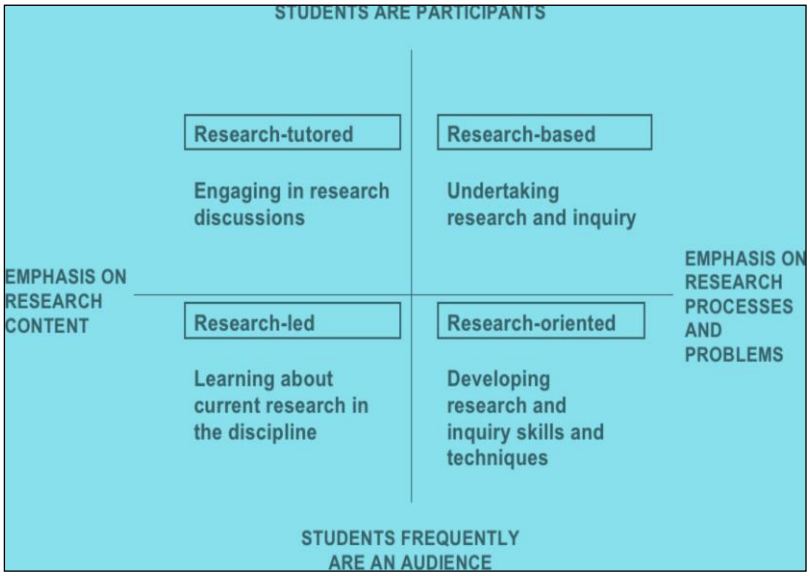

Figure 1 The nature of undergraduate research and inquiry

Source: Healey and Jenkins, 2009, p. 7. (Reproduction permission granted by authors)

Teaching can become a way of enabling ongoing research for art and design students who have completed master or doctoral studies. After graduation, those earlier research projects can be extended or enriched through gaining employment as teaching staff, allowing ongoing paid participation in the academic research community.

For some academics, the opportunity to teach was the primary reason they chose to work in universities. In those cases research is secondary to teaching, as illustrated by the statement of a UK study respondent who saw the teaching of different generations of students not only enabling him to maintain disciplinary knowledge, but also being the driving force of his career (in Henkel, 2000, p. 211). This would not be an isolated case, but increasing class sizes and the need to be continually producing research outcomes, not only to enhance promotional opportunities but also to keep employment, sees many academics precariously balancing the requirements of both. Juggling the needs of teaching and research can seriously impact upon the research capacity of artists and designers. Sometimes balance can be found by creatively merging various activities, as per Stewart's example whereby her "classroom has become synonymous with [her] studio, functioning as a laboratory for research" (2007, pp.125-6). She describes this as a "hybrid practice … crossing over between spaces and places, exploring and practising in diverse and often foreign fields, retaining an excitement about change and difference, practising simultaneously as artist researcher [and] teacher" (p. 126). Stewart shows that research and teaching can be interwoven, perhaps in ways less likely in art practices outside the university, where different expectations and rules apply: but whether finding a balance involves conflict or not, it can still affect what, and how, practitioner research is undertaken.

Competition for Funding

Although the idea of an academic community suggests an environment infused with co-operation, collaboration and collegiality, the reality is often somewhat different. These positive characteristics are certainly present in any given institutional or disciplinary network, but the NPM focus on economic outcomes and pressures for individual performativity generate greater competition at all levels. Despite funding bodies such as the Australian Research Council encouraging cross-disciplinary and cross-institutional group applications in attempts to inject some balance, a fiercely competitive environment remains.

As government funding for research decreases, researchers must throw a wider net to begin, or continue, research programs. Often capability must be demonstrated before the application can be considered, generating much unfunded research before, or alongside, the funding application. Demonstrating capability sometimes involves schemes that generate productive cooperation between several faculties or institutions, allowing collaboration to emerge as a by-product of competitive processes. These connections might continue to be productive even when funding applications are not initially successful; however, it is also just as likely that competition for scarce resources will have divisive impacts on professional relationships.

Sometimes these negative impacts come from "self-serving biases" (Campbell & Sedikides, 1999, p. 23) whereby individuals readily accept credit for successes that affirm self worth but blame other people or circumstances for any failures that threaten that self-image. One study of the processes involved in the production of journal quality lists found journals more likely to be judged high quality if the judge had prior involvement with them, for example as an editor or author. This bias was even more likely if the title had not previously been categorised as high quality. Campbell and Sedikides argue that this occurs as a consequence of an individual's—mainly subconscious—inclination to reassert his/her self-worth by justifying the reputational investment already made.

The same bias can emerge when competing for research funding. If a research application is unsuccessful—as many are—there is a tendency to blame other people or situations for that failure. This might discourage some individuals from trying again, or negatively affect opinions about the value of co-operative efforts, thereby decreasing collegial behaviour. Henkel's 2000 study, for example, found comparative decreases in cooperative behaviour when competition for funding increased. Faced with higher competition, academics in that study believed that acting less collegially and more entrepreneurially was more likely to ensure their own research success. Increased competition for funding can also negatively affect research diversity, especially if universities choose to focus funding application efforts on a few, already highly performing projects. This trend, described by Laudel (2006, p. 376) as the Matthew effect—"to everyone who has, more shall be given"—has obvious implications for academics attempting to initiate new projects.

Another negativity, also related to the Matthew effect, occurs when researchers already attracting funding are "poached" from one university to another. Bidding wars (Healey, 2006a) between competing institutions can involve lucrative offers—higher salaries, better facilities,

more freedom, etc. – as incentives for already productive researchers to relocate. If successful, this approach can bring many benefits to an institution; in Australia, a big jump in research outcomes can better demonstrate capability, leading to increases in future funding. Bidding wars are an international practice, one that Ball again sees as a form of "fabrication" created by institutions to present a visage of economic competitiveness that is required to overcome neoliberal funding restrictions (2000, p. 12). Institutions that might otherwise work together, become rivals for research funding. Short-term strategies at best, bidding wars distract from the need to develop early career researchers who may be the stars of the future.

There are of course instances of universities working together, but even these alliances can have competitive purposes. For example, Luzeckyj has studied three Australian university alliances, the Group of Eight (Go8); the Australian Technology Network (ATN); and the Innovative Research Universities group, each of which aims to exploit commonalities by creating in-groups that simultaneously exclude others and provide lobbying power that can "achieve particular advantages for the constituents" (2009, p. 3).

Academics are not just affiliated with particular universities; they are also members of disciplinary interest groups that have been described as communities of practice (Lave and Wenger, 1991), who share research interests that often transcend institutional politics or geographical boundaries. Even in these groups, however, negotiation over understandings and the development of new ideas involve both consensus and conflict. Cumming argues that "competition and contradiction" will always be "part and parcel of regular participation in a joint enterprises" (2008, p. 118), while Readings takes a stronger position on competitiveness by criticising ideas that suggest universities are fraternities "of the rational, the just, or the national community, which incarnates a pure bond of sociality around the disinterested pursuit of the idea" (1996, p. 180). His contention is that "anyone who has spent any time at all in a University knows that it is not a model community, that few communities are more petty and vicious than University faculties" (p. 180). Ziman also notes this type of competitiveness when he discusses the "notoriously competitive and disputatious" nature of the scientific research community (2000, p. 28). He adds that the "public history of science is a chronicle of bitter intellectual controversies between strongly partisan groups. Every research laboratory is a miniature arena of individual opportunism and social conflict" (p.29).

Although the ideals of academic collegiality and communities of practice do exist, they do so amidst tensions of competition and conflict, further highlighting the complexities of

researching in a university environment that is rife with conflicting values, discourses and ideologies.

Practitioner Research

Becher and Trowler (2001) have comprehensively described the ways that university academics are not only aligned with disciplinary "tribes and territories" but are also intellectually and personally acculturated by particular epistemological and ontological paradigms, which encompass firmly held views about what "research" is.

Traditional research paradigms tend to value the ordered and the rational, perhaps epitomised by Thomas's (1998, p. 142) description of educational research needing to be "logical, clear, tidy, parsimonious, rational [and] consistent". By comparison, practitioner research can sometimes be decidedly illogical, often unclear and untidy, usually labour intensive and time consuming (therefore not parsimonious) and fraught with contradiction and inconsistencies. Given this mismatch with the "ideals" of research, it is perhaps not surprising that the renowned American economist and sociologist Thorstein Veblen argued strongly for universities staying away from the "troublesome world of practice" (1968, in Schön, 1992, p. 53). He famously said that "the pursuit of knowledge that occupies the scientist and scholars is not 'practical' in the slightest degree" and that "intimate association with these 'utilitarians' unavoidably has its corrupting effect on the scientists and scholars, and induces in them also something of the same bias towards 'practical' results in their work" (Veblen, 1957, pp. 19-22). Although that opinion may seem extreme, it is an articulation of a modernist conviction that research and knowledge production must be separated from practical application.

When Veblen gave these opinions, science represented the epitome of knowledge production, as noted by Jarvis "all the occupations and professions wanted to ground themselves in science. Scientists had high status; practitioners who did not know their theory did not" (1999, p. 14). Despite the objectivity and infallibility of the "scientific method" being called into question (e.g. Feyerabend, 1993; Latour & Woolgar, 1986) ideas that theory might be able to be created through the processes of actual practice are still not widely accepted.

Schön and Practitioner Research

The tension between basic and application-oriented research has been of considerable interest to researchers such as Schön who describes acceptance of technical-rational theories

of knowledge as “the price that professional schools paid” in order to gain admission to universities (1987, p. 229). Schön sees the belief that knowledge production should be separated from actual practice as the cause of an ongoing “crisis of confidence in professional knowledge” (1992, p. 49). He believes this crisis occurs when university students learn theoretical knowledge, but do not gain the ability to apply that knowledge to the messy and complex situations that inevitably occur in professional life. Schön’s argument is that this additional knowledge can only be learned through reflection on practical action.

John Dewey, the subject of Schön’s Harvard doctoral research in 1954, was a strong influence on the development of Schön’s ideas. Kinsella has argued that in writing his seminal book, *The reflective practitioner,* Schön sought to reframe Dewey’s theory of inquiry “by adopting reflective practice as his own version of Dewey’s reflective thought” (2009, p. 7). Other theories influencing Schön’s concept of reflective practice were Polanyi’s tacit knowing and Ryle’s “knowing-that versus knowing-how”(p. 9).

Schön’s inquiry explores the notion of a type of knowing-in-action that he describes as ordinary practical knowledge that is inherent in practical action. Knowing-in-action enables a practitioner to qualitatively appreciate professional situations in order to guide practical competence. Aspects of this knowledge may be acquired through instruction, but it is honed by both practical experience and by a form of post-experience reflection that reviews “successes” and “failures”. Reflection might also occur mid-experience in response to new circumstances, and this Schön calls “reflection-in-action”. It is at this point of reflection-in-action, he believes, that a practitioner crosses from a practical orientation into an experimental research realm. Schön argues that “when someone reflects-in-action, he becomes a researcher in the practice context. He is not dependent on the categories of established theory and technique, but constructs a new theory of the unique case” (1983, p. 68). This recognises practice as research, not only the site of theory testing but also of theory creation:

> When the phenomenon at hand eludes the ordinary categories of knowledge-in-practice, presenting itself as unique or unstable, the practitioner may surface and criticize his initial understanding of the phenomenon, construct a new description of it, and test the new description by an on-the-spot experiment. Sometimes he arrives at a new theory of the phenomenon by articulating a feeling he has about it. (pp. 62-63)

Schön's ideas involve reconceptualising the technical-rational hierarchy that places a higher value on theory creation than on applying theory in practice. His then quite radical suggestion is that in professional practice, this hierarchy should be reversed. In effect, Schön is arguing for an "alternative epistemology of practice grounded in observation and analysis of the professional artistry" (1992, p. 50). Although accepting that university research will probably always be somewhat blinkered by both formal and informal institutional rules, he is still confident that universities will eventually accept his new epistemology, describing that gradual process as an "epistemological battle", albeit a "battle of snails" which would only be noticeable if "you look very carefully" (1995, p. 32).

Today, reflective practice as a mode of practitioner research is widely accepted in a number of different disciplines, clear testimony to the resonance of Schön's ideas. Despite, or perhaps because of, this widespread embrace, his ideas have also attracted considerable criticism (e.g. Bleakley, 1999; Ecclestone, 1996; Eraut, 1995; Usher, Bryant & Johnston, 1997). Some of this criticism stems from incorrect applications of his approach, as when practitioners incorporate ideas such as reflective journaling into otherwise technical-rational research, thus weakening Schön's epistemological argument. Usher, Bryant and Johnston, for example, arguing from an adult education perspective, see reflective practice being easily able to be "accommodated to a technicist implementation" (1997, p. 168). Also, by focusing too specifically on the research practice itself without also considering impinging external factors, the potential for productive change is lost. To this point Usher et al. make the additional comment that "reflection-outside-action may be as critically significant as reflection-in-action, whether being 'outside' is taken as a choice or is imposed"(1997, p. 170).

Kinsella, whilst noting this tendency to cherry-pick Schön's approach, comments that "some would suggest that the manner in which reflective practice is applied in educational contexts and by professional bodies and regulatory colleges sometimes becomes a form of technical rationality in itself" (2009, p. 7). This creates situations whereby Schön's theory is treated like a formula that is applied in surface ways, thus avoiding the deeper, transformative process that enactment of the theory requires. Criticism not withstanding, the uptake and development of many of Schön's ideas about the role of practice as a method of creating—as opposed to just testing—theory has been crucial to widening the acceptance of practitioner research in university environments.

Alternative Modes of Knowledge Production

Although Schön was of the academy, his intention was to align academic requirements and expectations more closely with the actualities of professional practice outside universities. He believed it was possible to find a middle ground that could equally serve both educational needs for learning theory and professional needs for practically applying it. In ways complementary to this aspect of Schön's approach, the Mode 2 research model proposed by Gibbons et al (1994), also offers alternative modes of academic knowledge production. This type of research is undertaken through the use of multidisciplinary groups, brought together to fast-track work on specific real world problems requiring urgent solutions. Whilst not suggested as a replacement for more traditional modes of research, Mode 2 represents a sometimes necessary alternative that is "socially distributed, application-oriented, trans-disciplinary, and subject to multiple accountabilities" (Nowotny et al., 2003, p. 179). Other alternatives to traditional technical rational modes of knowledge production include the "triple helix model" (Etzkowitz & Leydesdorff, 1998, 2000; Leydesdorff & Meyer, 2006), "academic capitalism" (Slaughter & Leslie, 1997), "post-normal" science (Funtowicz & Ravetz, 1993) and "post-academic" science (Ziman, 2000).

In different ways, each of these new forms of knowledge production tries to bridge gaps between university research and the real world by interacting more closely with the problems, situations or contexts that research hopes to resolve (Hessels & Van Lente, 2008). Although each claims access to spaces that traditional research cannot reach, none proposes to replace it completely. Piper suggests that this proliferation of ideas about alternative ways of producing knowledge evidences an "increasing disenchantment with scientific method as the preclusive mode of analysis" (1997, p. 54). In academic research fields this activity has promoted a new phase of reflexivity which has been influential in practitioner research being increasingly accepted as a legitimate, alternative mode of knowledge production (Jarvis, 1999). From the perspective of art and design research, these developments offer interesting possibilities for increasing the ways that practitioner researchers can contribute to the knowledge production process. Yet, whilst a foot is in the door, the struggle for legitimacy is ongoing, as will be discussed in the next chapter.

Chapter Summation

This chapter commenced by giving two main reasons for this study focusing on practitioner research in a university environment. The first reason related to various complexities associated with gaining access to community practitioners and the second to particularities associated with the university environment.

From an individual perspective, art and design students begin university with assumptions about the types of information research practices they will need for their study. Many, particularly those with advanced information technology skills, will perceive themselves as already competent researchers, a view that might be encouraged by their lecturers if advanced digital literacy is interpreted as the key understanding required. Such assumptions can allow a preoccupation with learning disciplinary content and practical creative skills, with little or no time given to learning the types of information enquiry skills that will ultimately be needed to inform disciplinary practice.

The importance of learning about content is clear, as reinforced by Naidoo's assertion of "close and sustained interaction" with disciplinary content being "crucial in enabling students to master complex conceptual structures and the modes of analysis for the purposes of knowledge creation" (2005, p.33). This makes obvious sense, but academic success needs more than just knowledge of disciplinary content: it also requires understanding and mastering many tacitly inferred skills associated with the academic context. For example, in a study looking at disciplinary practices within doctoral degree award processes, many participants referred to the importance of "learning the rules of the game" that were not explicitly taught (Parry, 2007, p.6). In some instances a student's failure to learn these tacit rules would be interpreted as failing to understand the disciplinary content being explicitly taught (Gerholm, 1990).

Interconnections between inferred "rules" and the actual practices of individuals has been a particular focus in the sociology of Bourdieu, who sees the social and the individual as inextricably connected. From the perspective of Bourdieu's theories, an individual practice is "a socially constituted layer of human activity, which loses its subjective meaning when reduced and removed from its embedding in the societies in which different forms occur" (Rawolle, 2010, p. 124). In order to understand the "what" and "why" of any practice, it is necessary to look very carefully at the social space within which the practice occurs. This is a

relational stance that perceives actions as being both influenced by, and influencing the wider social environment. Through the process of investigating these interrelationships, Bourdieu progressively develops various concepts that he uses as “thinking tools” (in Wacquant, 1989, p. 50) for relational analysis. Probably the most well known—and used—of these are his concepts of “field”, “capital” and “habitus”, which are utilised in the first chapters of this study for purposes of summation. To clarify the usefulness of these tools for this purpose at hand, it is first necessary to outline the concepts themselves.

Bourdieu uses the idea of a “field” to describe particular sites of social practice that are interconnected within wider social groups. The concept of a “field” is “an abstraction used to apprehend and describe the relatively autonomous social microcosms that in relationship to each other make up social space” (Lipstadt, 2003, p. 398). To be identified as a field, a social microcosm must be somewhat self-regulating, in that individuals within are “engaged in the play of its own distinctive game”; a field must be also able to “produce its own distinctive capital, and cannot be reduced to immediate dependency on any other field” (Calhoun, 2008, p. 295). To Bourdieu, fields are essentially sites of “struggle for domination” (in Eagleton, 1992, p. 116) between particular individuals or groups of “agents” (Bourdieu, 1983, p. 312) who strategically endeavour to get closer to the centre of power, thus maximising their capacity for influence and control—or agency—within that field.

As illustrated by Bourdieu’s formula: [(habitus)(capital)] + field = practice, these three concepts function relationally with each other (1984, p. 101). This representation shows action (practice) as being “determined both subjectively by the habitus and objectively by the field in which it is undertaken” (Mathewson, 2003, p. 4). Habitus describes particular learned dispositions that enable social agents to understand and successfully utilise the logic of a field (i.e. the rules of the game). Habitus develops over time, but some social agents may have previously developed dispositions that enable them to enter new fields more easily, as for example the ease with which children of wealthy families gain entrance and assimilate into elite universities. Being predominantly surrounded by others with similar personal backgrounds allows these agents to be like “fish in water” (Bourdieu & Wacquant, 1992, p. 127) because the dispositions they already possess allow them to function without being aware of the water as such. Other agents, having not already developed these dispositions, are “fish out of water” (Tranter, 2003) because they lack prior knowledge of the prevailing logic of that field. These agents are expected to assimilate that field logic over time, often reaching a point where they too will take such knowledge for granted. The habitus exists in “an

unconscious relationship" (Bourdieu, 1993, p. 76) with the field, in that the field and habitus are different aspects of the same phenomenon. Bourdieu explains this:

> On the one side, it is a relation of conditioning: the field structures the habitus … on the other side, it is a relation of knowledge or cognitive construction. Habitus contributes to constituting the field as a meaningful world, a world endowed with sense and value, in which it is worth investing one's energy. (Bourdieu & Wacquant, 1992, p. 127)

Getting closer to positions at the centre of power involves accumulating distinctive capital that is both "the process within, and the product of" the field (Thomson, 2008, p. 69). Bourdieu nominates four potential forms of capital, these being economic (e.g. material wealth), social (e.g. connections), cultural (e.g. ways of dress, speech, tastes) or symbolic (e.g. educational qualifications) (1986a; 1986b). Capital tends to be field-specific, although some types (e.g. material wealth or qualifications) can have value, or can be exchanged, in multiple fields. Field elites are the social agents closest to the centre of power and this group has considerable influence over which capital is most valued. This influence is used to preserve the value of capital that the elite group themselves possess—often through devaluing the capital of others—thus maintaining the status quo.

Despite this effort towards maintaining the status quo, fields are still subject to conditions of considerable "agency and change" (Thomson, 2008, p. 73) and this can gain momentum at times of societal upheaval. Although fields are largely autonomous, they are only ever relatively so. Crossley notes that this relative status occurs "because … participants seek to achieve change in other fields (e.g. the political field) and because other fields, such as the economic and media fields, intrude upon it in a variety of ways" (2003, p. 62).

Crossley (2003) also notes the presence of "fields within fields": for example, the higher education field containing a "research field" that itself contains various disciplinary fields. This means that external pressures affecting higher education may have differing impacts on fields within. For example, an emerging social issue may lead to the promotion and subsequent increased capital value of particular types of research. External change might not only affect the potentialities of particular types of research but can also lead to changes in power relationships in the wider field. The ongoing potential for change is a key factor of Bourdieu's concept of social fields, as he sees them being always subject to power shifts emerging from "relationships (e.g., oppositions or alliances; domination or resistance) between various social

agents occupying different positions" (Albert, 2003, p. 149). Undoubtedly some caution must be used when trying to strictly align Bourdieu's concepts with the real world: as Thomson notes, Bourdieu never intended field, capital and habitus to be considered exact representations of social life, but rather to be used as "scholastic devices" to "help researchers make sense of the world" (2008, p. 74).

For this study, it is Bourdieu's contention that "the real is relational" (Bourdieu & Wacquant, 1992, p. 72) that is of particular relevance. The obvious diversity of art and design practices means that the likelihood of practitioner research being informed in multidimensional ways is high. Although high levels of diversity might equate with equally high levels of conflicting values, in focusing this study on diversity within the shared practice of informing creative research, conflict becomes of lesser interest; so despite Swartz arguing that Bourdieu's encouragement for researchers to "think relationally" (Bourdieu & Wacquant, 1992, p. 228) is essentially an invitation to share his "conflict view of the social world" (Swartz, 1997, p. 63) this study does not focus on conflict. Not focussing on conflict does not lessen the value of thinking relationally because that perspective still usefully highlights inevitable interconnections between individual practices and "all factors that constitute the "figuration" (Vandenberghe, 1999, p. 51). Even though a conflict mode of analysis has not been explicitly used in this study, Bourdieu's concepts (field, habitus and capital), and his emphasis on relationships between individual practices and wider contexts provide useful frames for summation.

This chapter has presented a relational view of university research by considering key external pressures on research practices over the last few decades, in particular those exerted by the neoliberal (NPM) politics. The dominance of this paradigm has led to increases in government regulatory interventions within higher education that have reconfigured the ways that both teaching and research is undertaken. The same neoliberal ideas have led to universities becoming considerably more "corporatised" and, according to Ordorika, this development has led to increasingly "economized" views of higher education (2009, p. 73). This reconceptualisation has occurred alongside the development of competitive global "markets" for higher education that have further entrenched a view of higher education and research as mercantile commodities. It has been argued that "education as a field in the UK and Australia has been reconfigured by the doxa of neo-liberal policies" (J. Blackmore, 2010, p. 103) Bourdieu uses the term "doxa" to describe a dominant belief in any given field that is generally perceived as "common sense or orthodoxy" (p. 102). Establishing a dominant belief as

“common sense” has the effect of generating “a drive in agents that makes them operate according to the rules of the game as they stand “ (Thomson, 2010, p. 16), as opposed to seeking alternatives.

Although promoted as common sense, doxai always support dominant agendas, as evidenced by the speedy adoption of neoliberal ideals by conservatives and right-leaning social democrats alike. Contradictions associated with aiming to provide higher education for more people, with less government funding, are masked by “common sense” appreciations of the need to be careful with public money and the great benefits arising from a better-educated workforce. Each of these ideals is so patently good that any problems arising from trying to do much more with much less can surely be blamed on ineffective, unwieldy higher education systems: so systems are reviewed, recommendations are made, new regulations are introduced, and the doxai are perpetuated.

In practice, government initiatives to increase enrolment in higher education have led to larger class sizes and to the hiring of more casual teaching staff to cope with these. Widespread casual employment of academics leads to potential degradation of teaching programs, as casuals are often hired only just before, or even sometimes after, a course begins. Casual employees are less likely to have the course-specific knowledge of longer-term academics achieved through experience over time.

Increasingly, permanent academics are also expected to do more with less. Through balancing teaching responsibilities (producing high student satisfaction rates), administrative work (meeting additional regulatory requirements) and research (producing outcomes communicated in specifically prescribed ways), academic time is squeezed in multiple ways. Those academics judged by qualifying criteria not to be “research-active” risk losing their employment. Staying research-active often require academics to take time away from teaching activities. J. Blackmore points to teaching efficiencies often requiring “a shift from ‘fat’ to ‘lean-and-mean’ pedagogies, with reduced tutorials, increased tutorial size, and less student contact” and this potentially decreases student engagement and student satisfaction overall (1997, p. 92).

Increasing competition for research funding and changes in research reporting that come from more widespread “quality” auditing continues to reshape the types of research being undertaken, with short-term, “industry-style” research (Nowotny et al., 2003, p. 183)

becoming more common as “longitudinal” studies are increasingly broken into series of short-term projects, each project team working under the threat that the next iteration will not be funded. A necessary preoccupation with the search for research funding makes further inroads into academic time. These types of external pressure trigger significant changes in the higher education field, but as cracks appear in traditional research structures, other less traditional research may find space to emerge. New strategies and alliances become more possible, particularly when government funding becomes available for collaborative research between institutions and disciplines.[1] Practitioner research, once seen as hopelessly “utilitarian” (Veblen, 1957, p. 32) is gaining academic credibility, not just as a method of testing research but also as a valid research method in and of itself. This illustrates ways that disruptions in a field can disadvantage some whilst providing opportunities for others “as old demarcation lines and boundaries become porous or break down altogether” (Gibbons et al., 1994, p. 37). However, despite having a toe in, practitioner researchers are not yet “fish in water” (Bourdieu & Wacquant, 1992, p. 127) because influential players, from the past and in the present, still wield considerable power over the doxai that reinforces and justifies traditional perspectives.

From a relational perspective, change is always multidirectional; and as practitioner researchers, by necessity, adapt and change to play the university research game, their action inevitably causes adaption in the research environment itself. Bourdieu’s formula (habitus)(capital)] + field = practice) (1984, p. 101) suggests that practice is generated by relationships between one’s dispositions (habitus), one’s position within a given field (capital), and the current conditions of that particular social arena (field). Social agents, working within particular fields, not only exploit opportunities that arise, but also act to create them. This ongoing interaction generates an environment within which fields are “dynamic and ever changing” (Gopaul, 2011, p. 16).

And so this chapter, at least from a practitioner research perspective, ends on a somewhat positive note. Although practitioner researchers still grapple with legitimacy challenges in some research contexts, acceptance by the wider university community is gradually growing. The next chapter will look at some of the challenges faced by art and design practitioner

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[1] For example: the Collaborative Research Networks funding initiative http://www.innovation.gov.au/RESEARCH/COLLABORATIVERESEARCHNETWORKS/Pages/default.aspx)

researchers in universities and at the ways practices are both adapting to and reshaping ideas of what university research is and can be.

Chapter 2:
Artists and Designers as Researchers

The move from art or design schools to universities was a change that presented both challenges and opportunities for art and design practitioner researchers. This chapter looks at events that preceded that movement and considers the various circumstances that were triggered by the change. For many, the sudden transition from working in art and design schools to becoming academics in universities was an exciting, yet anxious time that required reconsidering long held assumptions about what practitioner research was. The process activated considerable debate about how practitioner research might best be described, and the discussions exposed many different understandings and beliefs. Incorporating art schools into universities also triggered an upsurge in art and design practitioner degrees being offered at the PhD level, and this involved extensive negotiation regarding the various rules and regulations associated with doctoral research, particularly in terms of the validation and acceptance of performances and artefacts as research outcomes.

This chapter focuses on these four aspects: the movement of practitioner researchers into universities, the development of practitioner research degrees (particularly PhDs), discussions about practitioner research methods, and determinations of how research outcomes might best be presented.

Art and Design Practitioner Research in Universities

Most art and design schools or faculties now existing in Australian universities came from various vocational institutes or colleges of advanced education (CAEs) that merged with, or sometimes became, universities in the late 1980s. This change was the consequence of an earlier binary system of higher education being replaced by a Unified National System (UNS). In the binary system CAEs and like institutions existed apart from universities, originally providing pre-degree diplomas but later also undergraduate and postgraduate coursework degrees in a range of applied studies, including art and design. Although college academics were involved in research in a number of different ways, colleges were generally not funded either for research activities or for the provision of research degrees (Mahony, 1992). The incorporation, or transformation, of CAEs into universities was the most recent of a number of mergers and changes that college staff had negotiated because larger CAEs were themselves amalgamations of smaller, often single-vocation oriented organisations such as teaching or

nursing colleges. These earlier amalgamations, along with the introduction of a Higher Education Contribution Scheme (HECS) requiring domestic students to partially fund their university education, were government reforms aimed at substantially increasing both domestic and international (full fee paying) enrolments. Mergers were intended to achieve economies of scale by creating larger and more cost efficient organisations, thereby more positively positioning Australia in the global higher education market (Scott, 2004).

The 1980s, when progression towards the UNS was occurring, was a time during which universities, and all other public sector organisations, were under increasing pressure to adopt corporate, business-like management approaches. As mentioned in the previous chapter, this "corporatisation" was a precursor to regulatory changes brought about by the influence of NPM theorists (e.g. Savas, 1987 and, later, Osborne & Gaebler, 1992). Within this sensibility, CAEs were perceived (by the Hawke Labor government) as providing education at a lower per capita cost by hard working staff able to combine applied research with teaching whilst being administered by "no-nonsense top-down management systems" (Bessant, 1996, p. 112). By comparison, universities were seen as "remote ivory towers spending vast amounts of money with little accountability and engaging in irrelevant research" (p. 111). These perceptions convinced the government to undertake a complete overhaul of the higher education sector to enable "urgent redirection in order to contribute more effectively to economic and social reform and to increasing Australia's competitiveness internationally" (Harman, 2009, p. 96). The successful strategy was to use funding as both the carrot and the stick.

Reducing the total number and increasing the average size of higher education institutions was "encouraged" by changing funding rules as outlined in two policy papers (Dawkins, 1987; 1988). These changes increased funding for larger institutions whilst substantially decreasing funding for smaller ones, which in effect forced many smaller colleges to enter into mergers to survive. College courses at the time were generally very focused on particular professions, and have been described as "distinctive in the then higher education system in being characterised by demanding processes for course introduction and reaccreditation of courses at regular intervals" (Mahony, 1994, p. 303). This meant that college teaching staff had invested considerable time and energy into professional community engagement. As a result of the first round of college mergers into CAEs, significant rationalisation of courses needed to occur, especially in cases where similar programs had led to different awards (such as associate diplomas as opposed to undergraduate degrees). Rationalisation produced winners and losers, with some programs upgraded and others discontinued. This would have been disheartening

for many of the affected academics, but they had little time to count their losses before being hurled headlong into university mergers. The speed of the second wave of mergers between 1987 and 1991 is well captured with the comment that "virtually overnight and following many instances of 'shotgun marriages' and often torturous labour, the 19 publicly funded universities and around 44 CAEs gave birth to 35 universities" (Harman, 2002, p. 95).

The response to these mergers from university communities was mixed. Whilst administrators saw opportunities in the funding benefits flowing from incorporating CAEs—especially when considerable real estate assets sweetened deals—many university academics saw the mergers as threatening academic standards (Scott, 2004). Some feared increased competition for limited research funding and resented having to take on "poor cousins" who had little research experience and were therefore "another hungry mouth to feed" (Strand, 1998, p. xiv). Others hoped the mergers might give existing university academics more research time, especially if college academics took over some of their teaching hours. It was hypothesised that large numbers of ex-CAE staff in universities would provide "a relatively easily identified group of non-researchers to non-fund, with the recruits grateful enough for the increase in status not to resent being used to defend the status quo" (Scott, 1988, p. 14).

Whether college staff were grateful for their higher status or not, universities were definitely the dominant players in mergers. Mahony notes that universities enjoyed the "greatest discretion in determining their institutional futures' and that university status had been "achieved at considerable cost to many of the [college] sector institutions and their staffs" (1993, p. 471). Meek notes that

> Universities threatened by alterations to the boundary conditions between themselves and the colleges … partially neutralized the threat by absorbing many of the colleges. Universities [were] not amalgamating with colleges, but colonizing them; extra resources, for instance, [were] not being requested to modify university courses, but to upgrade the standard of college offerings. (1991, p. 485)

Harman argues that despite their "equal but different" rhetoric, the Australian government seriously underestimated the negative impacts ensuing from cultural differences between colleges and universities, in particular college loyalties to local professional communities as opposed to the global, disciplinary allegiances that tended to hold sway in universities (2002, p. 98). These cultural differences continued to be distinctive even after the demise of the

binary system (Everett & Entrekin, 1994) and for art and design college academics coming into universities as a minority group, the differences often challenged deeply held assumptions and values. Where they might have previously perceived themselves as “artist-teachers” (Daichendt, 2009, p. 33), their identities now began to be redefined as research academics. In the process it appeared that community connections and teaching skills, built up over years and previously seen as strengths, began to be less valued.

Comments provided to a 1993 survey (Mahony, 1995) into the post-binary impacts of working in higher education highlight this conflict, with one academic respondent quoted as saying “the move has restricted the more open outlook of CAEs toward becoming a “traditional” university with stress on traditional research and no understanding of research and consultancy in design and art” (p. 96). Another noted that ”due to financial constraints, changes of formula funding ... the pressure is towards chalk and talk, lessened contact and more [moving] away from skill and techniques acquisition, therefore diminishing the qualities of designers, architects and artists” (p. 96). The increased tension between teaching and research requirements is further illustrated by other survey comments: “concentration on post-graduate teaching and research degrees devalues the work of those of us who are happy to be involved with the undergraduates”; “our institution pays lip-service to ‘teaching excellence’ but does not back-up the rhetoric with either resources or recognition” (p. 96). These comments highlight the disaffection and confusion that inevitably occurs for people who have invested time and energy in creating high-quality teaching programs that, in a new context, appear to be suddenly devalued.

College academics coming into universities also found their formal qualifications being questioned. In many of the art and design colleges a pre-degree diploma had been considered an acceptable terminating award (Frankham, 2006) because it provided a foundation for building additional expertise through creative practice and teaching. In universities, however, academics were expected to have completed postgraduate research, and not having done so was perceived as a handicap. College academics were therefore encouraged to upgrade qualifications, as illustrated by Harman’s comment that “Institutions which hope to develop a reputable research capacity, in particular those aspiring to become universities, need to ensure that staff who are not already doing so, pursue research-based degrees” (2002, p. 101).

Certainly some academic staff in the former CAEs had completed PhDs prior to the UNS restructures, but not many. A 1989 survey of Australian academics by Moses and Ramsden

(1993) reports only 18% of college academics having gained a PhD, as compared to 75% of university teaching staff and approximately 48% of staff in the larger technological institutions. When considered from the perspective of staff needing to have achieved at least the equivalent of the highest degree available in their institutions, which in CAEs was probably a coursework Masters, this statistic is not surprising. Investing the considerable time and energy required for doctoral study may have been seen as diminishing, as opposed to enhancing, teaching practice. The choice to invest in teaching experience rather than in research degrees may have made the college academics better teachers, but their lack of research experience was a disadvantage in the university environment.

Practising artists and designers with teaching experience gained over many years were now unable to participate fully in their new academic roles, or qualify for promotion, unless they completed a research degree. To make matters worse, some of these practitioners were philosophically opposed to academic research into art and design, seeing theoretical analysis as in some way diluting, or stultifying, creative practice (Bennett, Wright & Blom). Sometimes this opposition was privately expressed, but it was also more publicly proclaimed, as in Ritterman's comment that "it was not unknown for specialist arts institutions to seek to promote their attractions through reference to an 'anti-academic' approach" (2010, p. 34). In ways that would later come to be described as an isolationist stance, many of those opposed to academic research into creative practices argued for art and design being a special case that should be able to exist within universities but also be allowed to stay apart from "traditional" university research requirements (Biggs & Buchler, 2008; Borgdorff, 2008b).

Perhaps dashing many hopes, the influx of college academics did not significantly decrease the teaching load of the existing university academics. In fact post merger, university academics were expected to teach more, not less, whilst still maintaining research activities (McInnis, 1996); but this did not mean that incoming college academics had their teaching hours lessened. Despite needing to take on the additional work of developing research profiles, most former college staff still had "student contact hours greatly exceeding those of academic staff at the original universities" (Everett & Entrekin, 1994, p. 210).

Although often very different, in some ways college and university academics were also quite similar. Adams, reporting on a number of academic staff surveys conducted around the time of the mergers (e.g. Little & Peter, 1990; McInnis, 1996; Moses & Ramsden, 1993) points to high levels of agreement amongst all participants about the importance of opportunities to be

creative, pursue one's own interests and be involved in scholarly activity, and sees these as "powerful and widely-held aspirations for academic staff from both the new and the older-established universities" (Adams, 1996, p. 426). In the decade following the formation of the UNS many former college academics chose to undertake research degrees, creating a significant spike in the number of doctorates awarded by Australian universities during the 1990s (Pearson, Evans & Macauley, 2008). A similar spike occurs in the number of awarded doctorates incorporating creative or performance works, as illustrated in Figure 2.

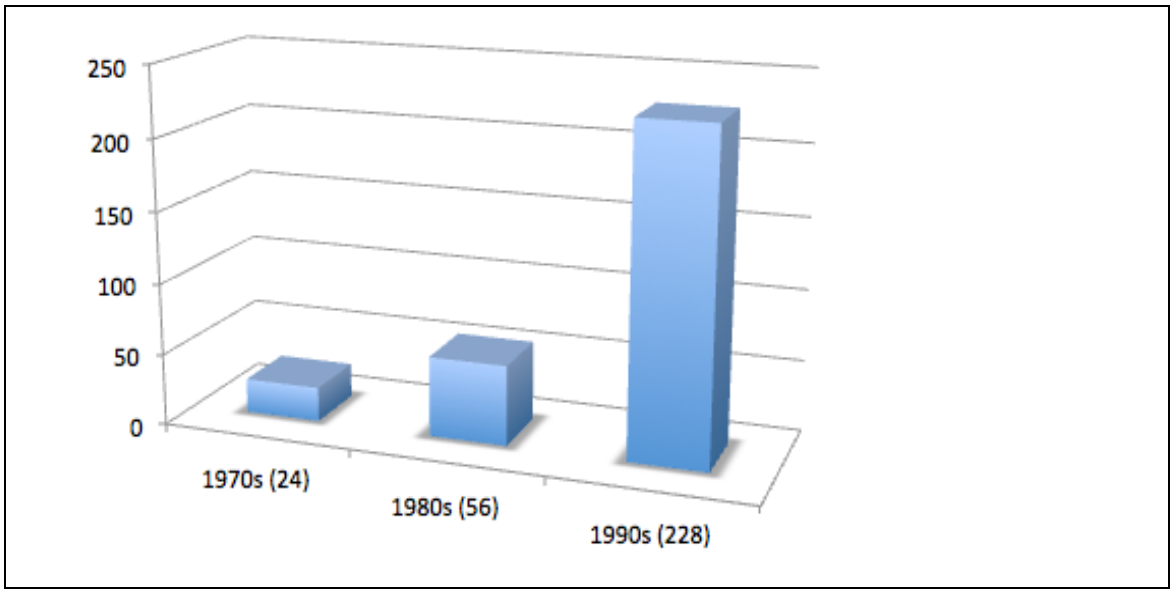

Figure 2 Completed PhDs including visual or performing arts components, 1970s-1990s

Source: Created from information provided by Evans et al., 2003, p. 8

Strand highlights the visual and performing arts as one of two academic disciplinary areas showing the highest increase in staff upgrading qualifications (1998). This significant increase in academic practitioner research heralded an upward trend in university examination boards' acceptance of creative artefacts and performances as research outcomes, and contributed to the many changes that were beginning to impact on doctoral research programs generally.

Higher Degree Research in Studio-based Art and Design

This large increase in practitioner researchers undertaking doctoral degrees intensified existing debate about the appropriateness of PhD qualifications for artists and designers. Links with 13th -century European programs of study that prepared scholars for law, medicine, theology and teaching (Emlyn Jones, 2005; Noble, 1994) have established the PhD as "one of the oldest degree types" (Dally, Holbrook, Bourke, Graham, & Lawry, 2003, p. 2) but modern variations

are very different to early forms, especially in terms of requiring unique contributions to existing knowledge (Boud & Lee, 2009). The degree with closest ties to the modern PhD is much less ancient, with the earliest awarded at Yale (USA) in 1861 and others being established at Oxford and Cambridge (UK) between 1917 and 1920 (Morgan, 2001). Australian universities first began offering PhDs in the 1940s, and although there is some disagreement over the identity of the first graduate, both contenders were women—either Joyce Dorothea Stone or Erica Wolff—graduating from the University of Melbourne (Dale, 1997; Evans, et al., 2003).

Despite this relatively short history, the tenuous links to 13th-century scholarly endeavours promoted a general perception of PhD programs representing immutable traditions, and this had caused "considerable educational inertia" (Noble, 1994, p. 11) that for some time was able to hold off most attempts at instituting change. That resistance was, however, no match for NPM reformers of the 1980s and 90s, who required all areas of the public service, including all aspects of higher education, to be subject to regular review (Guthrie & Neumann, 2007). Suddenly the entrenched traditions of PhD programs were open for discussion, not only in Australia but also in other countries undertaking neoliberal reforms. It became immediately apparent that the traditions around PhD awards had been interpreted and enacted in widely different ways, even in terms of fundamental assumptions about the role of PhD study. In the UK, a 1992 discussion report, *The nature of the PhD*, by the UK Office of Science and Technology found that PhD programs had been variously defined as the end stage of a higher education cycle, as an apprenticeship in scholarship, as a contribution to knowledge (emphasising original research), or as a research training program (Gilbert, 2009). Although PhD study might arguably encompass all of these goals, it was found that each program tended to focus on only one. Universities' lack of agreement about what PhD programs should be designed to accomplish, in conjunction with other factors such as increased PhD enrolments and the general commodification of all services provided by universities, intensified government concern about the quality of the programs being offered. For example, long PhD completion times and high drop-out rates was perceived as student disillusionment with poorly provided research training and "a significant waste of talent, and public and private investment " (Gallagher, 2000, p.9).

In Australia, again using funding as both carrot and stick, the government introduced the Research Training Scheme linking funding with PhD completions: non-completions translated into non-funding. The total allowable time for (full-time) PhD completion was changed from 5

to 4 years (Neumann, 2007). The ways that measurement affects the performance being measured (Nowotny et al., 2003) has been discussed in the previous chapter; in the case of PhD completions, decreasing the allowable time raised concerns about a loss of research diversity (Chubb, 2000) particularly if universities "were encouraged to select low-risk students who are seen to be able to complete within the time funded" (Neumann, 2002, p. 172). Alongside these structural disturbances, new requirements to align research more closely to industry raised the potential of more fundamental threats, not only to the ways that knowledge might be produced but also to the nature of knowledge itself (Gibbons et al., 1994). These and other reforms were seen as having impacts that would be "profound and far-reaching" for PhD programs in Australian universities (Chubb, 2000, p. 23).

Although "profound and far-reaching" impacts are often associated with negative circumstances, the destabilisation caused by significant change can also provide positive opportunities, especially when it opens doors to new ideas. This has occurred for example, when the "fluidity and even disarray" caused by the increased use of qualitative research methods has influenced acceptance of practitioner research in universities (Bannerman, 2004, p. 66). When these impacts are considered alongside higher education amalgamations and other government reforms, it is easy to imagine a maelstrom of changes through which wider cultural transformations are suddenly seen as possible. In this sense, PhD program reforms have allowed more, not less, diversity, as noted by Boud and Lee:

> many of the political and economic shifts in the positioning of the doctorate are in significant tension with older, more implicit forms of apprenticeship and enculturation into disciplinary knowledge, disciplinary modes of production and disciplinary cultures, that characterised the PhD until recently. These traditional practices are being gradually infiltrated and metamorphosed by new practices producing new kinds of researchers and knowers, where attitudes, capabilities and dispositions become as important as expertise and knowledge. (2009, p. 19)

In Australia, Wollongong University and the University of Technology Sydney (UTS) were the first institutions to offer doctoral programs specifically for creative practitioner researchers in 1984 (Baker, Buckley & Kett, 2009; Candy, 2006). These early programs chose to bypass arguments about the appropriateness of PhDs for practitioners by using the term Doctorate of Creative Arts (DCA) rather than PhD. The University of Tasmania (Tasmanian School of Art) claims to have awarded the first "studio PhD" in 1995 (Frankham, 2006, p. 3). From these early

beginnings, creative arts practitioner research doctorates can now be undertaken in 29 Australian universities and as noted by Paltridge et al., "are often discretionally allowed (whilst not advertised) at a number of others" (2011, p. 244). Most Australian universities describe their practitioner research doctorates as PhDs, with a few offering both a PhD and a DCA (Baker, Buckley & Kett, 2009).

This increase in universities offering practice-based doctoral programs, whether DCA or PhD, somewhat masks the continuing problems experienced by many students trying to align creative practices with doctoral program structures, problems that are exacerbated by variations in the expectations of different institutions. Gilbert (2009) reporting on an investigation into the advertised objectives of doctoral programs of 25 Australian universities, revealed a variety of different expectations (see Table 1).

Table 1 Advertised outcomes: Australian doctoral programs

Element of degree objectives or outcomes	Number of institutions referring to element
Original contribution	24
Providing new facts/knowledge	9
Formulating theories	5
Reinterpreting data or ideas	7
Implementing research project	11
Critical review of literature in the field	8
Methodological techniques and skills	7
Independent critical thought	7
Communicating research findings	6
Relevance to scholarship in the field	6
Formulating problems	3
Research ethics	2
Personal development	2
Commercialisation and acquiring grants	1

Source: Gilbert, 2009, p. 61

All but one of these universities required doctoral studies to make some type of original contribution to the field. In the case of creative practitioner research outcomes, this requirement often causes confusion about how originality and level of contribution is

interpreted. Whilst it seems logical for disciplines themselves to decide the validity of claims for original contribution, it is also important that practitioner research maintains credibility with other institutional stakeholders. Berridge notes that it is important that practitioner research is not perceived as "some kind of soft option, an aberration allowed by a university that is some kind of twilight home for bewildered creative people" (2007, p. 6). As a relatively new entrant to the university environment, art and design practitioner research requires acceptance not only in aesthetic terms, but also at institutional, cultural and ideological levels (Hanrahan, 2005).

Arguments about the appropriateness of a PhD for practitioners continue, and are perhaps exemplified by Langrish's comment that "many areas of university life have fought against this ruling without success. The answer is always the same, if you want a doctorate for practitioners, fine, but don't call it a PhD, call it something else" (2000, p. 298). Some argue for artists being more appropriate PhD candidates than designers, because design is perceived as more closely intertwined with the commercial world (Redmond, 2000, p. 464). Elkins saw the expectations of existing PhD degrees in the United Kingdom and Australia as untenable for practitioner researchers and the requirement for "new knowledge" as particularly problematic because

> In order for "the production of new knowledge" to make sense as a justification for PhDs in creative art, it would be necessary to have a university-wide understanding of the expression. And that, I propose, would be impossible because these anthropological and phenomenological senses of "knowledge" are not what scientists and others mean when they say that they create "new knowledge". (2004, pp. 29-30)

Nelson describes an amendment to Monash University doctoral regulations that replaced "contribution to knowledge" with "cultural contribution of substantial significance" a change he saw as "a very liberating declaration, which Monash as a whole received with relief and embraced warmly" (2009, p. 170). Nelson also promotes a plurality of approaches to art practitioner research within doctoral programs with the observation that "Method in our field is not universally generalizable" and "is best handled on a case-by-case basis" (p. 171).

Some commentators see practitioner doctoral programs as strategically important to wider debates about the validity of all practitioner research in universities. Gray unequivocally sees "research for higher degrees to be the best mechanism to raise awareness of critical and

contextual issues of practice, analyse and interpret ideas, and develop new cultural strategies" (1998, p. 86). Hanrahan argues that the "intercourse" of art and research, in the context of research degree programs, offers "another avenue for the generation and articulation of insights into the nature of the thinking that art involves – its rigour, criticality, fluidity, range, and so on" (2005, p.6). Candlin sees the development of practitioner PhDs as representing the opportunity to reconfigure established academic territories by affecting "constructions of academic space, opening it up to a different constituency, to different forms of knowledge and of practice (2000, online). Scrivener and Chapman on the other hand, note that

> Much of the contemporary debate on practice based research is theoretical and abstract, focusing on such issues as originality and knowledge. In contrast, for the doctoral supervisor and student, the prosecution of a doctoral programme is practical and situated, requiring a position to be taken on theoretical and practical issues, whether agreed or contested, e.g., the role, form and quantity of documentation accompanying research outcomes, e.g., paintings. (2004, online)

It is well known that students, from any discipline, will inevitably experience some level of anxiety whilst undertaking doctoral research. For example, Candlin comments that "anxiety is endemic to doctoral study; abnormally balanced or overly arrogant candidates aside, virtually everyone suffers from it (2000, online). In the case of practitioner researchers, anxiety can be exacerbated by general uncertainties about whether practice is "really research" and about the ways outcomes will be reported and assessed. Additionally, some art and design practitioner researchers have anxieties about writing, as illustrated by the following interview extract:

> It may sound a bit big-headed but I know I'm known in the artistic world. I've had a lot of shows of my work and I know that it's well regarded. The problem with doing this (research degree) is you are suddenly nothing! … What it means is that I am a novice at doing research, it's a bit disconcerting … The contrast is a bit difficult because I am struggling with it and of course I feel inept. (in Hockey, 2003, p.85)

In a later publication, Hockey and Allen-Collinson report on the common occurrence of otherwise skilled creative practitioners undertaking a PhD "with little or no understanding of the craft of [academic] research, its formal protocols, procedures, and philosophical underpinnings" (2005, p. 81). They note that "analysis, and in particular the analytic writing

necessary for the construction of a PhD thesis, [involves] starkly contrasting experiences from the familiar, relatively comfortable terrain of making" (pp. 83-84). Other, more fundamental anxieties occur when students worry that reflexive analysis might "make them worse practitioners" (Biggs, 2002a, online) or that "their powers of aesthetic expression would be greatly reduced by new-found 'objectivity'" (Hockey & Allen-Collinson, 2005, p. 87).

Art and Design Practitioner Research: Definitions

Echoes of this anxiety about art or design practices as research can be heard in debates about how such research should be described. Many believe in the importance of using descriptions that define the essential and unique character of practitioner research, thereby avoiding the danger of being subsumed into related, but not particularly pertinent, disciplines. However, reaching consensus is no easy task, and is further hindered by the plethora of different mediums coming under the umbrella description of art and design practitioner research.

The task of defining the concept of art and design practitioner research is also made difficult by many different opinions about what it actually is. Variations in descriptions include "practice-based research" (Biggs, 2008; Wright, Bennett & Bloom, 2010), "practice-led research" (Petelin, 2006; Smith & Dean, 2009), "creative research" (Carter, 2004), and "practice as research" (Barrett & Bolt, 2007). The issue that some have (e.g. Langrish, 2000) with more generic terms is that these fail to effectively delineate practitioner research from any other research, especially since all research will ultimately involve some form of creative practice. More specific terms, such as arts-based research (Eisner, 2006; McNiff, 1998), creative arts research (Strand, 1998), creative arts inquiry (Barrett & Bolt, 2007), and artistic research (Borgdorff, 2008a) have been criticised (e.g. Biggs, 2006) for not sufficiently encompassing the diversity of art and design research practices. Even more specific terms like "studio-based research" (de Freitas, 2002; Sullivan, 2005) can be problematic because of inevitable connections with particular locations that may risk excluding those working outside this norm.

Within that smorgasbord of terminology choices, some attempts have been made to differentiate particular terms from others. For example, Candy describes practice-based research as instances where created artefacts are "the *basis* of the contribution to knowledge" whereas practice-led research is seen to aim for new understandings about the actual practice processes (2006, online; original italics). Moline and Clarke offer a similar interpretation,

describing practice-based research as “focused on the explicit symbolism of materials and processes and their implicit and explicit social relations” as compared to the focus of practice-led research “on the properties of particular materials, … that tests materials in their combinations and processes of making” (2007, pp. 3-4).

This debate about the most appropriate way to describe practitioner research is largely specific to academic contexts and appears to be of less interest to those working outside that domain. For example, Scrivener notes that

> There is little to suggest that the artworld is in the midst of crisis, or that even if it is, that it does not contain within itself the intellectual resources to resolve that crisis. No, I think that we have to accept that we are dealing with a crisis located largely within the academic artworld. (2006, p. 159)

In fact, art and design practitioners outside universities are often resistant to their work being described as research. Frayling (1993) believes this resistance is based on stereotyped perceptions of researchers working in laboratories, and through misinterpreting research as a form of *re*-searching old territory rather than of creating something new. To help dispel these misconceptions he wrote a seminal discussion paper that attempted to outline commonalities between categories of practitioner research that could be undertaken by those working either inside or outside academic contexts (Table 2.).

Table 2 Frayling's proposed research categories and examples - (exact words)

Research *into* art and design	• Historical research • Aesthetic or perceptual research • Research into a variety of perspectives on art and design (social, economic, political, ethical, cultural, iconographic, technical, material, structural … etc.)
Research *through* art and design	• Materials research - such as titanium sputtering or colourisation of metals projects successfully completed in the metalwork and jewellery departments at the College of Camberwell, in association with the Imperial College of Science and Technology (partnerships are very useful in this area of research. • Developmental work – for example customising a piece of technology to do something no-one has considered before and communicating the results. A recent example, the Canon colour photocopier at the Royal College of Arts successfully used by some postgraduate illustration students, who have both exhibited and written up the results. • Action research – where a research diary tells, in a step-by-step way, of a practical experiment in the studios, and the resulting report aims to contextualise it. Both the diary and the report are there to communicate the results, which is what separates research from the gathering of reference materials.
Research *for* art and design	• Research where the end product is an artefact – where the thinking is, so to speak, embodied in the artefact, where the goal is not primarily communicable knowledge in the sense of verbal communication but in the sense of visual or iconic or imagistic communication.

Source: Frayling, 1993 p.5

Friedman claims Frayling's 1993 discussion paper is the "most cited and least read document in design research" (2008, p. 153), estimating that around 95% of the authors citing this paper have not read the original and are in effect misquoting it. The fact that Frayling fails to give actual examples for the last category (research *for* art and design) has led, Friedman believes, to the widespread misperception that advanced practice is the same as academic research. Certainly if a reader only had access to a secondary comment on Frayling's description of research *for* art and design (see Table 2), confusion might arise; but later in the paper Frayling clarifies that particular category:

> At the College, we give Higher Degrees or Honorary Doctorates to individuals with a distinguished body of exhibited and published work - but we do not at present offer research degrees entirely for work where the art is said to "speak for itself". Rightly or wrongly, we tend to feel that the goal here is the art rather than the knowledge and understanding. (1993, p. 5)

Other interpretations of Frayling's categories are given by Rust, Mottram and Till, such as "research could be FOR practice, where research aims are subservient to practice aims, THROUGH practice, where the practice serves a research purpose, or INTO practice, such as observing the working processes of others" (2007, p. 11). Elsewhere, Mottram discusses Frayling's "research *for* practice" category using more of his original words, describing the category as like "Picasso gathering source materials for the making of a painting", before querying whether such "compilation of a research file of material" is the same as the "intentional data gathering or data generation undertaken to address a research question" (2009, p. 13).

Keinonen (2006) assumes an incompatibility between academic research activities and art-world practices because of his belief that these are distinctive, non-overlapping areas that he calls the *Field of Art* and the *Field of Research* respectively. He later modifies this position, suggesting a number of categories emerging from completed doctoral programs that may allow some "inter-field" research projects. Although Keinonen does not cite Frayling, his categories fit relatively neatly into those Frayling proposed more than a decade earlier, as illustrated in Table 3. Keinonen sees the two categories of "Art contributing to Research" and "Research contributing to Art" as being most difficult because of the need for advanced expertise in both Fields of Art and (other disciplinary) Fields of Research.

Table 3 Frayling and Keinonen's proposed research categories and examples

Frayling	Keinonen	Keinonen's examples
Research into art and design	Research interpreting art	From within the "Field of Research" the inquiry explains or recognises phenomena within the "Field of Art" (e.g. traditional art criticism, etc.)
	Art interpreting research	Artists in the "Field of Art" are influenced by work taking place in the "Field of Research" (e.g. science fiction, etc., or art and science collaborations)
Research for art and design	Art placed in a research context	Artefacts from the "Field of Art" presented, discussed and evaluated as research, utilising criteria from the "Field of Research". (Keinonen uses an example where this has been problematic)
	Research placed in an art context	Outcomes from the "Field of Research" presented as a "Field of Art" artefact – e.g. philosophical studies presented as fiction (e.g. Umberto Eco's novels)
Research through art and design	Art contributing to research	Work undertaken within the Field of Art that generates outcomes in the "Field of Research" (e.g. Harkasalmi (2009) art practice experimentation leading to a new microbiological technique for cottoning flax)
	Research contributing to art	Enquiry undertaken within the "Field of Research" influences artefacts created within the "Field of Art" (e.g. feminist theory interpreted in artworks in Makela, 2003).

Source: Adapted from Frayling 1993 and Keinonen, 2006

Keinonen's categories appear to warn against interpreting advanced creative practice as being equivalent to academic research. He carefully outlines difficulties associated with developing the dual expertise required if art is to contribute to research, or vice versa. He dwells less on the difficulties associated with "research placed in an art context", but his example of Umberto Eco sets a very high bar indeed. Like Frayling, he sees "research interpreting art" as being least problematic because it is already commonly practised in the humanities faculties of many universities. Likewise, his description of "art interpreting research" seems unproblematic because it assumes that research undertaken by others will provide inspiration for creative work, which is then analysed and documented in other ways.

Keinonen seems particularly troubled by the category of "art placed in a research context". He uses as an illustrative example the controversial Finnish case of Riitta Nelimarkka, who presented only artworks, without any written component, for her doctoral submission at the University of Art and Design, Helinski in 2000. Her work was initially rejected as insufficient evidence of research, but she appealed and was finally awarded a doctorate, but at the lowest grade. Nelimarkka is a renowned artist and children's book author, so her case was not discussed behind closed doors but in the full glare of public media. Biggs and Karlsson note the case caused great agitation in academic communities in Finland, with critics regarding the submission as "a parody of doctoral theses and an affront to the academic system" (2011, p. 420).

Keinonen's categories seem to have been more motivated by the need to declare boundaries to avoid potential controversies, as opposed to Frayling who, more than a decade earlier, seemed more motivated by widening possibilities. Whatever the motivational intent, effective categories must always be somewhat malleable because practical realities will inevitably present exceptions. Good examples of this are provided by Newbury's instances of category-crossing practitioner research, which support his view that "the best of art and design research seems to facilitate an interaction between the different research traditions, practical and academic" (1996, p. 3).

Even if many real-life art and design practitioner research projects defy neat categorisation, category sets can still be useful discussion starters, especially for novice researchers. Rust, et al. emphasise this when they describe Frayling's categories as representing "different ways of thinking about research" (2007, p. 12): i.e., not necessarily describing all possible ways that art and design practitioner research might be undertaken.

Debates about researcher identities, research descriptions and categories are likely to continue as practitioner researchers become more deeply immersed in academic research environments. An essential aspect of this process involves coming to terms with research methodologies.

Art and Design Practitioner Research: Methodology

Despite practitioner research being increasingly accepted as a form of academic enquiry, the idea that "making" processes can themselves be used as research methods is much less widely accepted. A major review undertaken by the UK Arts and Humanities Research Council defined practice-led research as that "in which the professional and/or creative practices of art, design or architecture play an instrumental part in an inquiry" (Rust et al., p. 11), but this was immediately qualified:

> This is *not* to say that practice is a method of research or, as some assert, a methodology. Practice is an activity which can be employed in research, the method or methodology must always include an explicit understanding of how the practice contributes to the inquiry and research is distinguished from other forms of practice by that explicit understanding. (p. 11)

Others disagree. For example Haseman suggests that the employment of practice should be accepted as a "performative research" method, which diverges from qualitative research as a "third methodological distinction", as in quantitative-qualitative-performative (2006, p. 102). Performativity had earlier been proposed by Bolt (2004) and Carter (2004) to explain theory that emerges through making, but Haseman goes further by arguing for performative research as the *principal research activity* and for material outcomes of practice to be considered as "research findings in their own right" (2006, p. 102). He believes that a primary focus on the process or performance of practice resolves otherwise intractable problems caused by trying to adapt the methodologies of other disciplines. His contention is that this separation would benefit both qualitative and practitioner research because it would "reassert some of the original definitional clarity to the category of qualitative research" potentially acting to ease pressures causing "fissures and fractures within the field" (p. 104).

There is some attraction in Haseman's ideas about breaking off untidy outgrowths and planting them elsewhere to grow in a strong, hybrid paradigm, and perhaps he is correct in

assuming advantages to both traditions if researchers can focus more on the unique characteristics of each, rather than always trying to reconcile differences. Indeed, wide support for the idea that qualitative research enables ways of seeing, and experiencing, that are largely hidden from the quantitative researcher's view would logically seem to suggest that practitioners are also privy to views that are hidden from non-practitioners, looking in from the outside.

Barbara Bolt has applauded Haseman for "boldly asserting a performative paradigm and claiming it for the creative arts" but cautions about adopting this approach uncritically. Whilst agreeing that a performative paradigm may usefully "account for the novel nature of creative arts production" she argues that to "establish the credibility of a performative paradigm, it must establish criteria whereby it can interpret and validate its research within the broader research arena" (2008, online). Perhaps the very idea of drawing a line between the activities of practitioner researchers and others is an underestimation of the capacity of qualitative research practices to adapt, to meet new imperatives, and to allow progress in new directions. Tensions between different ways of seeing that are problematic in the short term can still become productive over time. This is reflected in Borgdorff's opinion that "a degree of restlessness and unease in the relations between artistic research and academia" is actually worth preserving because it has positively contributed to necessary change (2008b, p. 91). He appears to be arguing that practitioner researchers should work towards modifying existing paradigms when he comments that:

> It might take some getting used to for certain people, but the history of science shows that new research objects, methods and claims always meet resistance. One just needs to steer a middle course between assimilating with what is already there and stressing one's own particularity. In this respect, the current institutional advance of artistic research does not differ in essence from the rise of disciplines like sociology, the technological sciences or, more recently, cultural studies. (p. 85)

It is perhaps the opportunities inherent in this tension that have motivated many to persevere in seeking middle ground. Exploration of possible ways of moving forward have led to various new sets of criteria, more detailed than those already discussed (Frayling, 1993; Keinonen, 2006). For example, Scrivener (2009) argues that if practitioner research is able to meet the six general factors that characterise academic research (Table 4), then, whether quantitative, qualitative or performative, it could confidently qualify as academic research.

Table 4 Scrivener's six general criteria of academic research

1	Is a systematic investigation
2	Is conducted intentionally
3	Acquires new knowledge, understandings, insights, etc.
4	Is justified
5	Is communicated
6	Concerns a particular subject

Source: Scrivener, 2009, p. 71

Biggs and Buchler (2008) have proposed eight criteria to be used as discussion points when determining the effective functioning of practitioner research in academic environments (Tables 5 and 6). The first four they see as common to all academic research and the latter four as specifically pertinent to research undertaken into/for/through art and design practice.

Table 5 Biggs and Buchler's criteria of academic research 1-4

1. Questions and answers	Question is brought to the surface (may be framed as a theme rather than as a particular question)
2. Knowledge	What knowledge is understood to be and expectations about contributions of new knowledge is shaped by the conventions of each different audience
3. Methods	The appropriateness of method is determined by the questions and answers (in the context of the needs of the audience)
4. Audiences	Both the general academic audience and the discipline - specific audience provide the rationale for deciding whether a question, an answer and a method are relevant

Source: Biggs and Buchler, 2008

Table 6 Biggs and Buchler's criteria of academic research 5-8

5. Role of text and image	If research processes and outcomes need to presented in part (or completely) through non-text artefacts – to what degree and why
6. Relationship of form and content	Models of knowledge (i.e. the form content takes) are influenced by community norms and consideration of most efficient ways of communicating research outcomes
7. Function of the rhetoric	How non-linguistic models of knowledge (i.e. through artefacts) can be communicated to a general academic audience
8. Function of experience	What contribution does researcher experience make to research outcomes and if/how this is communicated

Source: Biggs and Buchler, 2008

Biggs and Buchler (2008) argue that practitioner research debates in universities have drifted off course through unnecessarily fixating how such research is different from that of other disciplines, thereby overshadowing more pertinent questions about how it is the same. Like Borgdorff (2008a), they argue for a "situated position" that enables progressive change from within the academy, seeing this as more likely to produce long-term benefits for practitioner research than would be possible from an "isolationist position" (Biggs & Buchler, 2008, p.6)

Whereas Frayling and Keinonen have focused on possible manifestations of practitioner research (i.e. what it might *be* in a university context), Scrivener (2009) and Biggs and Buchler (2008) appear to have explored possibilities for making it happen. In some sense, such frameworks may be seen as visual maps, devised to show pathways towards various destinations. If all research approaches were shown similarly, superimposed onto transparencies laid one over the other, it would be easy to imagine patterns of intersecting lines that are sometimes separate, and sometimes overlapping. From this perspective, methodological boundaries become less like stumbling blocks and more like opportunities for creative research flexibility. Makela and Routarinne argue that the "interpretational and pluralistic" nature of art and design practitioner research demands methodological flexibility, because variations in relationships between "the research context, the question, the method and the audience" cannot be predicted in advance: this means that method is often the "last

variable to be determined in the practice-led research process" (2006, p. 15). Wright et al. also argue for practitioner researchers using the "many available forms of creative approaches to research" not only to develop and maintain healthy diversity within practitioner research but also to invigorate qualitative research generally (2010, p. 471).

It is not only qualitative research that can benefit from pluralistic approaches to research. Being more open to the research methodologies of other disciplines is an approach championed by science commentator Basarab Nicolescu (2002) as a way of avoiding the pitfalls of research specialisation. Very deep, but not wide, knowledge can cause serious problems when "solutions" in one area negatively impact on another (e.g. research development of high-yield food crops encourages lack of plant diversity, endangering food sustainability). Taking a transdisciplinary approach goes further than simply interdisciplinary co-operation, because it aims for hybrid research in-between, described as "the transdisciplinary principle of uniting knowledge in the space between the disciplines" (McGregor, 2004, online). McWilliam, Hearn and Haseman argue that the "deployment of online computer games technology in education" is an example of transdisciplinary research that involves artistic and technical contributions being contextualised within "existing and emerging social practices" (2008, p. 248). Although many disciplines (e.g. education, computer science, art and design, cultural studies, business, etc.) might make contributions, the successful games ultimately transcend disciplinary boundaries when used within communities, especially when that use becomes a socially collective activity (Gosling & Crawford, 2011).

Mahy and Zahedi see art and design practitioner research as naturally inclined to being "multi and interdisciplinary, and co-created by the communities to whom it is relevant"; whilst not actually describing such research as transdisciplinary, they assert multi- and interdisciplinary input as enabling "innovation inside and across domains by making possible new applications, epistemological reflections, and even the emergence of new domains" (2010, p. 2). Collaborations across disciplines are also the focus of Carter's *Material Thinking* (2004) in which he presents collaborative projects that have each produced more than the sum of their parts. Using a weaving metaphor he describes multidisciplinary, collaborative practice as akin to "passing the shuttle of creative vision back and forth, in a way that advances or changes the pattern"; he sees this "back and forth" process as producing a greater complexity than ever possible in solo work and argues that "it is out of these implicated processes that a third apprehension emerges [and] when it emerges in this way, it constitutes material thinking" (2005, p. 5). Art and design practitioner research transcending disciplinary boundaries is an

idea that is also supported by Sullivan in *Art Practice as Research* (2005). He coins the term "transcognition" to describe a form of relational thinking that involves continual dialogue "between, within, and around the artist, art-work, viewer and setting, where each has a role in co-constructing meaning" (p. 130).

This responsiveness to arising circumstances and the utilisation of resources emerging from both intentional, and unintentional, collaborations is a frequently occurring theme in literature about practitioner research. Stewart, for example, discusses the advantages of practitioner researchers appropriating traditional research structures, for instance by subverting and restructuring them as required by the particular research needs of art or design making, a practice she describes as a "many faceted approach based on bricolage" (2007, p. 127). The researcher-as-bricoleur is a concept adapted from Levi Strauss's (1972) observations of fieldwork anthropologists fashioning methodological tools to meet situational requirements and is described by Denzin as "a person who fashions meaning out of experience, using whatever aesthetic and instrumental tools that are available" (1994, p. 15).

Although some (e.g. Evans & Le Grice, 2001) see a lack of strong academic methodologies specific to art and design practice research as being disadvantageous, in practice this lack may have enabled practitioner researchers to develop chameleon-like adaptabilities that perhaps prevent disciplinary bias. Changing research methods to suit each particular context may disadvantage researchers aiming for specialisation, but for "bricoleurs" it provides creative freedom, as Kincheloe and Berry note:

> Bricoleurs understand that researchers' interaction with the objects of their enquiries is always complicated, mercurial, unpredictable and, of course, complex. Such conditions negate the practice of planning research strategies in advance. In lieu of such rationalization of the process, bricoleurs enter into the research act as methodological negotiators. Always respecting the demands of the task at hand, the bricolage, as conceptualised here, resists its placement in concrete as it promotes its elasticity. (2004, p. 3)

In this way the fact that practitioner research lacks predictability becomes less problematic and more advantageous, as practitioner researchers adapt to the unique requirements of every project.

Outcomes of Art and Design Practitioner Research

If the common adage "the proof of a pudding is in the eating" is applied to academic research, it suggests that the quality of any research endeavour resides not only in outcomes produced but also in the reception of significant others. A chef might be excited by the taste of an innovative new pudding, but to provide proof that it increases culinary knowledge in general, that recipe needs to be shared by others. Art and design practitioner researchers likewise need to share research outcomes, but they need to communicate with different audiences who will often apply conflicting quality criteria. At one level art/design communities judge contributions made to art or design, but at another level academic peers and funding committees judge outcomes in terms of contributions to research credentials of departments or institutions. Sade sees this as requiring negotiation of "intractable differences" between "academic research and the fields of professional artistic practice" (2012, online).

Some research outcomes pass one of these tests but not the other: for example, projects that attract academic kudos and research funding may not achieve acclaim in the art world. Other creative works receive critical acclaim in art/design communities, but cannot be communicated or presented in ways required by academic worlds, even being rejected by doctoral examination committees (as experienced by Riitta Nelimarkka, discussed previously). Finding ways to balance both can be difficult (e.g. see Kalvemark, 2011). Academic researchers clearly need to produce outcomes that meet university requirements, yet Borgdorff also warns that if "artistic outcomes of the research should fall short of what counts as worthwhile and meaningful in the art world, artistic research would loose [sic] its rationale" (2009, online).

In academic worlds, the range of options for the presentation, communication and dissemination of practitioner research—performance or artefact-based—outcomes are far fewer than those available to researchers from disciplines with longer academic histories. As far back as 1998, the Strand Report highlighted the paucity of options for presenting art and design research outcomes and recommended broadening the scope, perhaps allowing art and design outcomes to be considered in ways similar to those of the humanities. This was a connection that became less promising when humanities researchers themselves encountered difficult times as a consequence of the Howard Liberal government establishing science and technology as national research priorities. Although the then Minister for Education, Brendan Nelson, resisted calls to mandate at least half of all government funding specifically for science and technology (Healy, 2006b), realistically, unless arts and humanities researchers were able

to align themselves in some way with the new research priorities, there was little chance of their even being considered for government funding (Gillies, 2004). In universities struggling for funding in an increasingly competitive environment, any research area not able to bring in funding dollars risked being sidelined.

After establishing national research priorities, the Liberal government commenced development of a research quality assessment scheme (RQF) but this process was interrupted when the Liberals lost the 2007 Australian general election. The change of government did not lessen the pressure for research quality assessment however, and, in due course the new Labor government replaced the RQF with a similar scheme: Excellence in Research for Australia (ERA). Whereas the RQF had been generally perceived as art-and design-unfriendly, the ERA recognised "non-traditional" research outputs, raising hopes that at last creative research outcomes would be considered within institutional research outcome counts. The importance of being treated as bone fide academic research is emphasised by Green's remark that "research of any sort – practice-led, quantitative, qualitative – takes time, energy and resources" (2007, p. 5); and practitioner researchers needed to access those resources in order to continue. As of 2013, research funding of around $66 million had been distributed to universities in response to ERA results (Trounson, 2013) and higher ERA ratings translated into higher shares of that funding. In order to stake a claim to these resources it was important for art and design practitioner research disciplines to figure in institutional research output counts.

The ERA, which is administered by the Australian Research Council, looks at the retrospective research performance of universities, in particular research quality (citation analysis, peer review, etc.), volume (total outputs, research income, etc.), application and recognition. Using a 2008 revision of the already existing Australian and New Zealand Standard Research Classification, disciplines were divided and coded into clusters of related subject areas, a decision that immediately caused problems for cross disciplinary researchers. Although modifications to accommodate interdisciplinary researchers have since been made (between the 2010 and the 2012 audits), some problems are ongoing (Marsh et al., 2012). Most art and design research fell into the field of research (FoR) code 19 (studies in creative arts and writing), which covered art theory and criticism (1901); film, television and digital media (1902); journalism and professional writing (1903); performing arts and creative writing (1904); visual arts and crafts (1905) and other studies in creative art and writing (1999). Institutions could choose to submit research outputs under the collective two-digit codes (for example 19

covers various studies in creative arts *and* writing) or in one of the more specialised four-digit codes within them (for example 1905, visual arts and crafts).

Around 66 FoR codes were eligible to submit “non-traditional” research outputs to ERA, which provided opportunities for practitioner research to align with the other FoR codes such as curatorial and related studies (2102), design practice and management (1203), or philosophy (2203) if this proved advantageous. Eligibility for submission included a minimum of 50 separate outputs within each code. This encouraged smaller institutions, or faculties, to cluster different disciplines, for example, clustering visual arts with philosophy, if this was likely to push up ratings. It is also likely that research outputs from low-rated disciplines in the early audits were reassigned in later audits to bolster the chance of borderline disciplines achieving higher ratings, strategies described by Phillips as “massaging codes to corral the strongest outputs in the areas where the university would get the most bang for its buck” (2013, p. 8).

The retrospective nature of the evaluations was also problematic, especially in the first iteration. Although obviously making sense for traditional outputs like citation analysis, the 2010 audit covered research outcomes for the period 2003 to 2008, leaving many practitioner researchers scrambling to pull together outcomes from events that had occurred up to seven years earlier. Historical decisions made about where or how art and design outcomes were exhibited or communicated suddenly assumed importance when trying to fit ERA requirements. Being able to accommodate rules created long after the occurrence of these events became more a case of good luck than of good planning. Another “key stumbling block” (Schilo, 2012, p. 218) was associated with the requirement for non-traditional research outputs to be accompanied by research statements that, in a maximum of 250 words, described the research background (field, context and research question), contribution (innovation or new knowledge) and significance (evidence of excellence). For those not accustomed to considering their research in those ways, this proved an exasperating experience (Schilo, 2012).

Table 7 Comparison of ERA ratings for FoR 1905 (visual arts and crafts)

University	ERA audit 2010	ERA audit 2012
Australian Catholic University	2	n/a*
Australian National University	3	4
Charles Sturt University	1	2
Curtin University of Technology	2	n/a
Deakin University	2	3
Edith Cowan University	2	2
Griffith University	3	4
James Cook University	2	2
La Trobe University	2	2
Monash University	4	4
Queensland U of Technology	2	3
RMIT University	3	4
University of Ballarat	1	1
University of Melbourne	4	3
University of New South Wales	4	5
University of Newcastle	2	n/a
University of South Australia	3	3
University of Southern Queensland	n/a	1
University of Sydney	4	5
University of Tasmania	4	3
University of Western Australia	2	n/a
University of Western Sydney	2	n/a
University of Wollongong	4	3

Source: ERA 2010 and 2012 Institution report available from http://www.arc.gov.au/era/default.htm

n/a = non-submission

Non-traditional research outputs were assessed by expert peer review, and whilst some saw this helping the "Humanities and Creative Arts cluster to circumvent the citation obsession that drives other disciplines" it was still seen as being significantly subjective (Meadows, 2011, p. 11). The ERA audit process rated all submissions on a scale of level 1 (well below world standard) to level 5 (well above world standard). Using the 1905 (visual arts and crafts) as an

example, none of the 22 institutions who submitted within this code for the 2010 audit gained level 5 ratings, although 6 institutions achieved 4s (above world standard) and 4 achieved 3s (at world standard). In the 2012 audit, only 18 institutions submitted within the 1905 code but ratings were higher overall, particularly for The University of New South Wales and The University of Sydney, who each achieved level 5s (Table 7).

Despite the importance of these audits for practitioner researchers working in universities, those outside this context might perceive such an exercise as irrelevant, and even a ludicrous game. Being able to play the academic research game successfully involves understanding the rules that dictate where, and how, research outcomes are communicated and, as the RQF and the ERA show, these rules can change when governments do. But in some ways these game rules are not much different from the evaluative norms that have been used for centuries in art and design practice communities. For example, the perceived calibre of art or design outcomes has always been influenced by where and how those works are presented to the world, and this can be an inherently conservative process, as evidenced by arguments about "functional" art and design in craft versus art debates (e.g. see Wolfram, Cox, & Minahan, 2002) or the attempted category exclusion of Aboriginal art from the 1994 Art Cologne contemporary art show (e.g. see Richardson, 2008; Van den Bosche & Rentschler, 2009). The fact that genuine innovation will eventually sidestep attempts to exclude it is historically exemplified by the "Paris Salon" rejection of Impressionist artworks, an action that triggered alternative exhibitions and ultimately the emergence of completely new artistic paradigms.

Given these historical antecedents, it is not surprising to find exhibition locations being suggested as determinants of quality. For example, Snell criticises PhD exhibitions being held in commercial galleries, asking if this is "the best or most appropriate model for the presentation of a body of work that establishes professional credibility" and arguing that the presentation of PhD research should be at least a "curated exhibition designed for a public gallery or museum" (2007, p. 3). In Australia however, where public exhibition spaces are relatively few and tightly scheduled, it is unlikely that many could be given over for relatively unknown PhD candidates. Even if some agreement might be brokered to enable doctoral exhibitions in public gallery spaces, the increasing numbers of PhD candidates would still see demand exceeding availability. There is also the additional issue of conservatism: even though the protocols of Australian public museums and galleries can hardly be compared with those of the "Salon de Paris" exhibitions of the 19th century, exhibitions today must still pass social acceptability tests. Public galleries may refuse to exhibit PhD research outcomes that pose too

much challenge for social conventions. Forcing all art and design PhD outcomes into the few available public exhibition spaces might therefore have the same adverse effect noted by critics of academic journal rankings, whereby to gain publication researchers must avoid challenging existing orthodoxies and toe the conservative line (Mingers & Willmott, 2010).

The influence of NPM ideals on the development of research quality audits such as the ERA has been discussed in the previous chapter, and the NPM movement itself has been variously described (e.g., Walker, 2012) as fundamentally driven by agency theory. An underlying premise of agency theory sees the rewarding of opportunistic behaviour as conducive to increasing productivity and the overall efficiency of resource allocation (Osterloh & Frey, 2009): which might be otherwise described as creating a "dog eat dog" environment. From this perspective, research assessment is not only about ensuring "quality", but is also about providing more evidence to support the "Matthew effect". In the longer term, this does not bode well for research diversity in Australia, or for relatively new research fields such as those involving art and design practitioner researchers. Yet despite this, for the last two audits at least, some artists and designers, mostly those in large, urban institutions, have played the ERA game well. It can only be hoped that the 2013 Australian election of a conservative government will not cause rules changes that will negatively affect that success.

Chapter Summation

This chapter has explored circumstances leading to art and design practitioner research being incorporated into Australian universities, an exploration that has looked at adaptions made by these researchers and at how these adaptions have changed both practitioner researchers and universities. More than three decades later, neoliberal reforms are continuing to reshape higher education, as evidenced by vocational TAFE colleges now offering undergraduate degrees (e.g. see Callan & Bowman, 2013), thereby moving along the path previously taken by CAEs. Tradition continues to be overtaken by practicalities, with yet another government review concluding that a key characteristic of effective tertiary systems is "the recognition that institutions may have a primary educational mission in one sector, but could still offer qualifications in another sector" (Bradley et al., 2008, p. 179). Many ex-CAE academics will no doubt view these TAFE developments with a strong sense of déjà vu.

As in the prior chapter, Bourdieu's "thinking tools", habitus, capital and field, will again be used for the purposes of reviewing this chapter. It has already been noted that these three

concepts work inextricably—each enabling the other—but this does not preclude the possibility of sometimes focusing particularly on one. For example, the focus of the previous chapter on the macro environment of research in higher education meant that Bourdieu's concept of field was of particular pertinence in that instance. This chapter focuses on art and design practitioner researchers coming to, and working within, new academic research fields; in this instance, Bourdieu's concept of capital becomes more particularly applicable.

Bourdieu devised his concept of capital to account for the types of power "stakes" that are employed by people functioning in social fields, he argues that the generation of capital is both a process in and a product of those fields (1985). To Bourdieu, capital is not just objectified monetary assets but is also embodied assets such as the personal predispositions, body language, and lifestyle choices of particular people. Between these objectified and embodied assets he identifies habitus, which is a third, more hidden form of capital that encompasses imbued dispositions and assumptions that are enacted within particular practices (Table 8). Moore describes Bourdieu's concept of capital as "the 'energy' that drives the development of fields through time" and sees it as both a stimulating force behind the operations of social fields and the inevitable product of those operations (2008, p. 105).

Table 8 Examples of general forms of capital

Forms of capital/type	Objectified	Habitus (dispositions and attitudes)	Embodied
Cultural	[Use of/attendance at/involvement with] galleries, museums, libraries, concerts, etc.	Knowledge of the canon; discrimination of genres and periods; the "rules" of the game	Cultivated gaze, poise, taste, desire for the recognition of distinction
Scientific	Laboratories, textbooks, instruments of "normal" science	Knowledge of the problem field, mastery of problem solving techniques, "objectivity"	Ability to manipulate instruments and formulae, rationality, desire for peer recognition

Source: Moore, 2008, p. 106

All social fields contain hierarchies of power, and the relative position of any individual, or group, within a hierarchy depends on the accumulated capital at their disposal. Just being a member of a particular group may provide access to some types of capital, but group

membership is also hierarchical. The expectation that college academics moving into universities would be so “grateful for their rise in status” (Scott, 1988, p. 14) that they would gladly take on the teaching duties of existing university academics is based on the assumption that university employment automatically bestows capital. In any social field, power elites define and maintain dominant values, and the best way to do this is to convince a critical mass that these values represent “self-evident” truths, a feat that is accomplished through a normalising rationale that Bourdieu defines as doxa (1998). Different fields obviously have different power elites with investment in different capital, so doxa tends to be field-specific, and this difference can mean capital is devalued when individuals move from one field to another. An example is the capital devaluation of teaching experience that occurred when art and design practitioners moved into environments in which research is valued more highly. In negotiating the initial changes associated with working in universities, many college academics experienced disjunctions between previous values and expectations and the predominant doxa of their new working environment. Some responded to the devaluation of their capital by arguing for the establishment of a separate existence for art and design practitioners within universities, whilst others more pragmatically worked with some of the dominant norms (e.g., upgrading qualifications) and negotiated others (e.g., finding middle ground for practitioner research doctorate programs and methodologies). Successful negotiation was in part made possible through the unsettling effects of government reform on the status quo from which field elites derived their power, and amid the ensuing fight-back some unguarded border posts were opportunistically broken through. Programs such as ERA audits will often require all disciplines to examine previously taken for granted norms, and this enables newcomers to gain some advantage. As Simon suggests, “it is the most difficult thing in the world to view *objectively* the system in which one is immediately involved” (1966, p. 92; original italics), but newcomers can more clearly see incongruous circumstances and this—at least potentially—stimulates reflection on how those circumstances might be able to be changed.

Working to establish practitioner research doctoral programs was a primary way of increasing the capital value of art and design research in universities. It at once contributed to capital development for art and design researchers themselves and acted as a process through which the possibilities for practitioner research doctoral degrees have been progressively explored. This has been a major factor in changing perceptions of practitioner research in universities, both by members of non-art/design faculties and also by practitioner researchers themselves (Candlin, 2000; Gray, 1998; Hanrahan, 2005). Whilst swelling the ranks of art and design

practitioner research graduates is a goal in itself, to maximise the capital inherent in this it is also necessary to carve distinctiveness—but not separatism—for practitioner research within university environments. Creating this particular distinction has involved much discussion, debate, dialogue and advocacy by art and design practitioner researchers in universities around the world. Artists and designers have grappled with defining appropriate research criteria and methods to satisfy doxai pertaining to academic vigour whilst maintaining the primacy of creative adaptability.

As different ideas about the inherent distinctions of art and design practitioner research are explored, argued, negated, defined/redefined, etc., this process itself becomes symbolic capital. The actions of pushing towards and pulling away from orthodoxies imposed by university doxai have not been free of anxieties (e.g. as described by Biggs, 2002b; Candlin, 2000; Hanrahan, 2005; Hockey & Allen-Collinson, 2005) particularly when having to function in the borderlands (Bogh, 2009) and as "arts-based research crosses the boundaries of art and research as defined by conventions formed in historically, culturally bounded contexts of the international art market and in the knowledge market dominated by higher education" (Finley, 2005, p. 685).

To accumulate capital in the art world artists and designers must legitimately claim "practitioner" identities, and these identities often involve different expectations than those associated with playing by university research rules. There is a level at which practitioner researchers become like "double-agents" playing "complex double-games" (Prior, 2005, p. 136) whereby universities and art/design communities are judging outcomes with criteria that are sometimes diametrically opposed. Of course, playing double games is ultimately always a choice that is made by actors deciding that a particular game is worth playing. This happens through a process that Bourdieu has variously described as "interest" or "libido" or "illusion", by which he means taking the game seriously, making a commitment to accept at least some of the rules, and seeing a particular capital as worth striving for. Bourdieu sees players as declaring their agreement "by the mere fact of playing, and not by the way of a 'contract', that the game is worth playing" (in Bourdieu & Wacquant, 1992, p. 98). Although keeping a foothold in both the art world and the university may ultimately limit complete assimilation in either, practitioner researchers choosing to play this way are likely to have more awareness of the doxai operating in each field. Unlike those agents with "well-formed" habitus that tends to blinker realisation of the doxa, the double agent adapts to competing expectations, thereby maintaining some awareness of field inconsistencies. Whilst this can often be uncomfortable,

there are also associated advantages, in particular an increased potential for reflexivity. In fact, the capacity for reflexivity has itself been claimed as a form of cultural capital (Threadgold & Nilan, 2009) that enables opportunities for those capable of deploying it. Sweetman (2003) argues for the possibility of a "reflexive habitus" that to some is contradictory, since habitus is associated with pre-reflexivity "beyond the grasp of consciousness, and hence cannot be touched by voluntary, deliberate transformation, cannot even be made explicit" (Bourdieu, 1977, p. 94). However, Sweetman suggests that when social agents are required to continually balance conflicting expectations, "reflexivity and flexibility may actually characterise the habitus, and that for those who display a flexible or reflexive habitus, processes of refashioning – whether emancipatory or otherwise – may be second nature rather than difficult to achieve" (2003, p. 537).

Reflexivity has been extensively considered in Bourdieu's writing: for example Deer notes that "as a methodological concept, reflexivity occupies a central role in his work, not to say a defining one if it is to be understood within the intellectual *field*" (2008b, p.199; original italics). Bourdieu argues of his fellow social scientists that "the more aware they become of the social within them by reflexively mastering their categories of thought and action, the less likely they are to be actuated by the externality that actuates them" (Bourdieu & Wacquant, 1992, p. 49). This can be interpreted as a way of saying that awareness of the social forces that drive us may make us free, and that even amidst playing, we can use reflexivity as a tool for maintaining awareness of the ways that the game plays us. As suggested by Adams, it is possible that for those unable to escape particular "games", reflexivity does not offer freedom, "just a painful awareness of the lack of it" (2006, p. 255); however, it could equally be said that through enabling a capacity to recognise potential opportunities, reflexivity might also provide the best way out of painful situations.

Bourdieu's concepts of capital, habitus and field have again provided useful tools for reviewing this chapter about art and design practitioner research within universities. In the case of practitioner researchers entering this particular field, Bourdieu's theories about social, cultural and symbolic capital provide explanations about the ways that art and design practitioner research is both adapting to, and changing, dominant ideas about what university research is and should be. Art and design practitioner researchers can be perceived as 'double agents' who work by balancing the expectations of university and art/design communities. This involves the accumulation of a particular type of capital in the form of reflexive, transdisciplinary skills that may provide future opportunities. Such capital accumulation is not

only important for the development of individual researchers and the field of practitioner research, but also for the development of an alternative view, a non-traditional perspective that can benefit the development of university research generally.

Chapter 3:

Practitioner Researchers and Information Engagement

This chapter continues a gradual narrowing of focus that began by looking at various aspects of university research in general and then at art and design practitioner research in particular. The intention of progressing in this way has been to position research practice as a relational activity that is both constrained and enabled by researchers responding strategically to contextual stimuli. As the underlying aim of this study is to consider the ways that practitioner researchers experience information engagement whilst informing research, this chapter presents other studies that have looked at similar issues. This consideration begins by surveying previous studies of the information behaviour of artists and designers. Although not all are concerned with practitioner researchers in university contexts, each contributes to what is known about the use of information by artists and designers.

Focusing on practitioner researchers working in universities introduces aspects particular to the research student context, where information engagement is not only about informing research but is also concerned with learning to investigate and analyse in particular ways. Being able to engage effectively with information is an important part of learning to research, yet students are often expected to master this with little assistance. To use a ubiquitous example, the traditional research literature review is a rite of passage for beginning research students that has been described as a "unique vantage point to examine the overall quality of a student's preparation for future work as an independent researcher" (Fitt, Walker & Leary, 2009, p. 3). Clearly the literature review is important, yet studies such as those of Bruce (1994, 2001) and Holbrook et al. (2007) have shown that students understand the review process in a number of different ways.

Like other social practices, "reviewing the literature" essentially becomes a creative process that involves balancing institutional expectations with the practicalities of each specific research project. Underneath that purposeful literature trawl are many other more subtle acts of information engagement that, over time, begin to be performed in somewhat subconscious ways. These subtleties are rarely explicitly taught, primarily because experts consider them to be common sense and expect students to learn through practice, and of course many students do. Learning to engage effectively with information in particular contexts has been described by Limberg, Sundin and Talja as an experience of being "embedded in cultural practices and imbued with norms and values … developing one's ability to understand and act in gradually

more sophisticated ways within a specific practice" (2012, p. 94). This description evokes that learning as a piecemeal process, as much unintentional as intentional, as learners gradually come to see the world in ways that are intrinsically connected with particular learning environments.

Learning something gradually, without being explicitly taught, can cause difficulties when students are just starting out. University research requirements can be confusing for any newcomer, but for art and design practitioners who usually engage with information in ways quite different to that required by universities, this confusion can be compounded. Sometimes information facilitators like academic librarians add to that confusion by structuring help in ways that unnecessarily amplify institutional expectations. Many of the studies discussed in this chapter have been concerned with finding better ways for librarians to assist artists and designers, but have been undertaken from the perspective of library use, limiting consideration of other potential places and ways whereby artists and designers may experience information engagement.

By focusing on the ways that students learn with information, the "information literacy movement" (Virkus, 2003) might have been expected to create opportunities for librarians to move beyond being just facilitators of library spaces and resources and becoming more involved in learning processes generally. In higher education however, the interconnection of information literacy with generic competencies or graduate attributes has often resulted in instrumental approaches that have diluted that potential. By focusing on specific information skills rather than on broader informational landscapes that involve "complex contextualized practices" (Lloyd, 2006, p. 570), many information literacy development activities provided by libraries fail to adequately represent the multidimensional nature of information use. This does not diminish the importance of information literacy development, but suggests that its effectiveness relies on due consideration of disciplinary contexts.

Focusing solely on concrete, generic skills not only impedes consideration of contextualised environments but also negates the embedded subtleties that are present in all effective information engagement. In fact, like all expert actions, effective information engagement involves a form of "tacit knowing" (Polanyi, 1967) that functions at the periphery of awareness and that tends to resist categorisation as a competency.

This chapter looks at these three aspects, beginning with a discussion of existing studies into artists' and designers' information use, moving to a discussion of the information literacy movement, then exploring the learning potential that is inherent in recognising and uncovering tacit ways of knowing. Finally Bourdieu's capital, habitus and field will again be used as summation tools, this time with a particular emphasis on habitus.

Studies of the Information Behaviour of Artists and Designers

Articles about the information needs of artists started being published in the 1970s when Toyne (1975; 1977) shared his experience of establishing a specialist library for the Falmouth School of Art. Toyne seems to have been involved in a number of different struggles with bureaucracy, first fighting to ensure the most appropriate resources were purchased for the new library, then for a modified computer catalogue system that would better meet the special needs of artists (Toyne & Broxis, 1984). His last article (1987) argues for college art libraries to be made more accessible to local art communities. Almost a decade before the promulgation of user-centred approaches (e.g., Dervin & Nilan, 1986), Toyne's practice appeared to embody that ideal.

In 1982 Pacey, then art librarian at Preston Polytechnic, wrote an article for the *Art Libraries Journal* in which he presented a typical day in a college art library in order to discuss the ways that art students used information. Like many since, Pacey makes particular reference to students "browsing" to find information, highlighted their particular needs for visual information (images, etc.), and noted the popularity of art magazines providing up-to-date "art world" information. Like Toyne, Pacey describes a user-centred approach to meeting student needs. Unlike Toyne, Pacey appears to be responding to the general threat of art libraries being absorbed into larger, centralised units. For example, he highlights that specialist libraries can provide:

> stock [that] is geared to student needs; its staff know the students and their concerns and are free to deal directly and immediately with suppliers; it is strategically located in an autonomous art college or, perhaps, within the art faculty of a Polytechnic or similar institution. (1982, p. 37)

Pacey was ultimately unsuccessful in retaining the specialist library: Preston Polytechnic evolved into the University of Central Lancashire and the specialist art library appears to have since been integrated into a multidisciplinary library.

An article by Day and McDowell also seems aimed at stopping the demise of a specialist library by reporting on a survey of students using an art and design library at the Newcastle-Upon-Tyne Polytechnic. In the spirit of Toyne, these authors also champion user-centred services with the comment that

> it is hoped that this modest study has added yet more weight to the argument for more user centred studies of information need and use, rather than library centred studies which inevitably tend to judge user behaviour in relation to what the library has already chosen to provide. (1985, p. 41)

Newcastle-Upon-Tyne Polytechnic eventually became the University of Northumbria at Newcastle after which it seems that the art and design specialist library was also merged into the general university library.

The closure of specialist libraries was not limited to the UK higher education sector. Canadian researcher Nilsen presents a case for retaining specialised art and design services in a branch library at Montana State University, Canada, arguing that "there is no doubt that an administration less concerned with maintaining consistency of service throughout the library system would enable a librarian to develop more client-centered services" (1986, p. 153). Sadly, like the others mentioned, that specialist library has also ceased to exist.

Over a decade later, perhaps as a consequence of the widespread integration of specialist art collections and services into central university libraries, Frank undertook a study aiming to help generalist academic librarians to understand the particular needs of student artists (1999). This study used focus group interviews to elicit information from 181 undergraduate art students from 12 liberal arts colleges and universities in Minnesota, USA. The students talked about their preferred methods for finding information and made suggestions for ways that a large generalist library might better provide for their needs, for example by integrating art-related material (books, journals, large format books) so that browsing could happen more efficiently. Alternatively they suggested signage improvements that would direct browsing students to other art-related areas. Perhaps not surprisingly, a number of the students felt that the

particular needs of art and design students warranted a specialist library, preferably one located closer to their working spaces/studios.

Midway through the 1980s and in the early 90s, a small flurry of publications about the information behaviour of artists practising in communities began to appear. These included a report on a panel discussion held at the 1986 Art Libraries Society of North America (ARLIS/NA) conference in which four artists talked about their reading habits (Ferguson, 1986); three short articles in the *Art Libraries Journal* (Opdahl, 1986; Phillips, 1986; Trepanier, 1986) in which artists wrote about "their relationships with books and libraries" (Hemmig, 2008, p. 246) and two articles in *Arts Magazine* which listed books judged by 39 practising artists as having "lasting significance in their lives" (Jones, 1991a, p. 21; 1991b, p. 25). The significance of these publications is that they seem to be the first to show interest in artists not affiliated with educational institutions, even if that interest, as described by Hemmig, was rather "casual and somewhat gossipy" (2008, p. 347). The fact that there was very little overlap in titles listed by Jones (1991a, b) shows evidence of the diverse and eclectic literary interests of practising artists.

In 1987 an *Art Libraries Journal* article looking at the information needs of artists in the community was written by Dane, who was then Manager of Art and Music Collections and Keeper of Prints at the Newark, New Jersey Public Library. This paper, first presented at a library conference, outlines the services for community artists and designers that were then provided by the Newark Public Library, including collecting specialist material, providing space for creative activities, sponsoring exhibitions in library spaces and purchasing works by local artists/designers. Dane notes "while these artist/designers are only part of the total clientele, they are perhaps the most motivated and the most rewarding to work with as real and beautiful things result from the association" (1987, p. 32). The article appears to be a public relations pitch that seeks to position public libraries as significant cultural players, and that seems to be a position that has stood the test of time, as many of these services are still being provided almost three decades later.[2]

In 1994, Stam from Syracuse University, New York, gave a conference paper that was later published as an article (1995). Stam reported on a study undertaken to explore "the

[2] For example still hosting exhibitions, see: http://www.npl.org/Pages/programsexhibits/index.html

relationship of artists to art libraries … for the purpose of gaining better understanding of artists' needs". Although interested in artists, Stam's survey respondents were art librarians. Whilst acknowledging that talking to artists would have been a more obvious method of obtaining data, she observed that "unfortunately, artists are not easy to get hold of … and even when cornered, they, like other users, seldom can provide the kind of reasoned information on their needs and use that translates directly into improved service" (p. 275).

The title of Stam's article, "Libraries as a bridge between artist and society", appears to celebrate libraries helping artists, yet her article presents libraries as very artist-unfriendly, some staffed by librarians who perceive artists as intellectually lacking: she quotes one art librarian who, after criticising artists' reluctance to learn library reference systems, makes the observation that "some artists don't read well, have few verbal skills and might even have reading disabilities" (1995, p. 275). Equally damning were criticisms of artists asking for library help, some of whom "can't pronounce, or spell, or fully remember some artist's name that they may have heard mentioned", whilst others "do not understand the nature of the information given [to] them" (p. 275). Hemmig argues that Stam's article presents "the alarming possibility that many librarians lack sympathy with artists' information-seeking processes and are disinclined to accommodate those processes when providing services" (2008, p. 349); certainly this article says more about librarians than it does about artists using libraries, and as a public relations exercise it fails monumentally.

As an artist and library cataloguer, Layne takes a more considered position in her article "Artists, art historians and visual art information" (1994). She begins by asking what visual art information actually is and who is likely to want to use it, then critically analyses six published articles in an attempt to provide a definition. Unfortunately, all of her chosen articles—except Pacey, 1982—are concerned with art historians or humanities scholars, not artists. Layne seems particularly interested in how libraries can provide visual art information and the technical processes required for optimum access, so in this sense is more focused on library processes than on the ways that artists use information per se.

Two Masters of Library Sciences (MLS) students at Kent State University, Ohio, Downey (1993) and Challener (1999), undertook studies to investigate how art students and faculty staff use academic libraries. Like Frank (1999), Downey is interested in how a centralised library might better provide specialist services. She presents questionnaire data from 17 academic artists (from the School of Art at the university) who chose from nine general categories of library

resources according to perceived levels of usefulness. Questions were asked about significant literary resources, levels of library use and other information facilities used. All respondents reported relying heavily on their own personal libraries, and using their institutional or public libraries primarily for journals and other recent material. They reported difficulties using the Kent University Library and most indicated a preference for a separate art library, closer to the faculty buildings. Downey believes her study results show that artists are unlike other humanities scholars in that they rely on "accidental" discovery and "cannot by extension be considered or expected to be a traditional library user". She argues for libraries needing to "acknowledge these characteristics, however unconventional, and attempt to provide library service accessible to its users" (1993, p. 25).

Challener's (1999) more in-depth study involves interviews with 11 studio art professors and sixteen art history professors, teaching in various liberal arts colleges and universities. She is interested in the library resources used by this group for both teaching purposes and their own creative work. She finds that although the professors themselves read widely, students are usually only expected to read supplied course material. Many professors take students on field trips to art museums, and the like, to increase their opportunities to experience different types of information. Most of the art history professors solely use their own institute's libraries, relying on inter-lending services to get resources from elsewhere. By comparison, studio art professors seldom use their institute's libraries, preferring public libraries for reasons that Challener does not identify. It is possible that studio art professors prefer browsing actual book collections as opposed to submitting title-specific requests as required for inter-lending services, but this cannot be verified.

In 1996 Cobbledick, then working for the Brooklyn Public Library, looked at the information use of four artist academics working in a large mid-western American university that boasted a "traditionally strong art program" (Cobbledick, 1996, p. 347). Cobbledick, aiming to use findings to construct a "framework on which future research can be built "(1996, p. 343) creates (but does not use), a research survey instrument. Although primarily directed at information-seeking behaviour, Cobbledick's study is the first to specifically mention ways that artists engage with the information found. For example, in a section discussing sources of technical information, she quotes one artist as saying "no matter where the information comes from, you're almost always going to do tests … you learn things in your conscious mind, but you also learn things sort of unconsciously. You can just sense when you're doing something wrong" (1996, p. 353).

Cobbledick presents artists using an extensive range of sources, but unlike previous studies, hers also considers information as more than just physical items such as books. Without actually referring to the work of Buckland (1991), her examples of information engagement exemplify Buckland's ideas about information being both tangible and intangible. Buckland sees tangibility as referring to information-as-thing (e.g. an image, or a document that informs theoretically or intellectually), and intangibility as referring to information-as-knowledge (e.g. information that arises as a consequence of coming to know something). In Cobbledick's study, intangible information engagement often occurs, as for example when one respondent describes "his accumulated experiences as an artist [and] his own history of thinking about and doing work" (Cobbledick, 1996, p. 350) as an essential information source.

Engagement with communities is the focus of a 1997 conference paper given by Oddos later published in the *Art Libraries Journal* (1998). Oddos, then working in the Paris Documentation Centre of the Musee National d'Art Moderne, discusses the history of that institution, established to serve curators and other art scholars. Oddos wants to extend services to creative practitioners in the general community—whom he calls the phantom public—and outlines ways of building the necessary relationships (1998, p. 18). Although his success or otherwise at community outreach is not reported, his paper is significant in terms of the importance of large museum and gallery collections to academic artists and designers, particularly in providing access to rare and delicate items that need to be viewed in situ.

Also in the 1990s, a study undertaken by Master of Library Science student van Zijl was discussed in an article co-authored by an academic colleague (van Zijl & Gericke, 1998). The study involved a survey of 15 art academics from the Vaal Triangle Technikon—now Vaal University of Technology—in Johannesburg, South Africa. Using a Likert scale, respondents were asked to rate a given list of information sources and information-seeking methods. This first study was later supplemented (van Zijl & Gericke, 2001) with a larger survey of 123 respondents, including art and design academics from several colleges and universities, members of South African art societies, and secondary school art teachers. Other publications (van Zijl & Gericke, 2002) emanating from this second survey also discussed artists' use of art databases. These studies provide valuable information about preferred sources and information-seeking methods of this targeted group, but have a particularly library-focussed interest.

A study reported by Littrell, in a paper given to the Tenth National Conference of the Association of College and Research Libraries in Denver, Colorado (2001) appears to be less library-centric. A librarian recently appointed as subject specialist for music, art, theatre, dance, and apparel design in the Kansas State University Library, Littrell uses the process of introducing herself to the faculty to prepare a series of questions that she later uses in interviews with 27 students and 14 faculty staff members. Through these interviews and ongoing dialogue and observation, she is able to record, and reflect on, changes in the ways these groups engage with library resources. Littrell approaches her study from a wide perspective by exploring the historical context whereby these "non-traditional" disciplines had come to be offered within the university sector, and is interested in whether "traditional" university services for faculties have adapted in any way for non-traditional needs. Although this is a small and context-specific study, it is an excellent example of attempting to look "outside the box" of the library world. In her conclusion, Littrell notes that her study shows that "the best way a librarian can assist artists is to be available when needed and stay out of the way when not" and that the "library must be viewed as more than [just] a place to do "traditional" research, but [also as] a place where ideas are born and brought to fruition" (2001, p. 294).

In the same year as Littrell's conference paper, another study (Reed & Tanner, 2001) was published in the *Journal of Academic Librarianship*. It was a quantitative survey of 48 academics from fine arts faculties—art, music, theatre and dance—at the University of Texas. Reed and Tanner used a Likert scale to ascertain the importance of a range of library resources, and also asked about respondents' use of a given list of library services. By comparison with Littrell's practitioner report, this reads very much like a number-crunching exercise. Although discovering important data to help collection planning and service development, Reed and Tanner's study would have benefited from an interview component to provide more information than can be gleaned by asking respondents to rate predefined categories. A comment in the conclusion of their article about the importance of librarians visiting "with faculty individually … to identify specific goals for library services and collections" (2001 p. 233), suggests that they intended to supplement this first study with more qualitative data gathered over time.

The prevalence of surveys or questionnaires as data collection instruments exemplifies a "library-centred perspective', according to researcher Cowan, because these "shape the range of possible answers into a narrow stream that cannot extend beyond the researcher's

experience or imagination" (2004, p. 15). In a literature review for her own research, Cowan finds that most reported studies into the information behaviour of artists are biased by concentrating on artists "who are conveniently situated in the academic world and who are library users" (p. 14). To avoid this, Cowan focuses her own qualitative study on an artist working outside this milieu. Of the studies already discussed in this chapter, Cowan's is the first to discuss biases inherent in library-world approaches to investigating information behaviour. Other studies, such as Cobbledick (1996) and Littrell (2001), do appear to have transcended that bias, but seem to do so incidentally, rather than by intent. Unsurprisingly, Cowan's outcomes are particularly focused on intangible information use (Buckland, 1991) and on the process of *informing* rather than on the products used to inform. Cowan describes her world-view changing as a consequence of undertaking this research, especially when she realised that she had started with predefined ideas about how and why the artist might seek and use information. She had assumed that information seeking would predominantly involve problem solving, but instead found her respondent working with information in ways that were "moving, relational, organic, dialogic and iterative" (2004, p. 19). Her report concludes with the observation that "information-seeking is a creative process that begins and ends outside of the walls of any library" (p. 19).

Questions regarding possible differences in the information behaviour of academic artists (as compared with those unaffiliated with academia) were asked by Visick, Hendrickson and Bowman in their investigation into the artists' library use. Their study outcomes, based on an online survey of 96 artists (including 27% affiliated with academic institutions), found no significant difference but did identify some dissimilarity in types of libraries used (2006, p. 33). Academic artists tended to primarily use their own institution's library and, to a lesser extent, art museum and public libraries, whereas community artists primarily used public libraries and, to a lesser extent, art museum libraries; overall however, the findings show both groups having similar levels of library usage.

In 2008, McLaughlin, an MLS student at Dalhousie University in Nova Scotia, undertook to investigate the types of information that visual artists used. A study sample of 15 visual artists was recruited through local arts organisations and institutions, and these participants were interviewed using a phenomenological approach. The study finds that artists use information that is sourced from people, from objects and from the environment. McLaughlin additionally describes artists using information in both passive and active ways. She sees "passive" information use as related to the generation of ideas, often involving serendipitous discoveries

(2008, p. 86). She classed information use as “active” when it occurs through gathering “factual or technical information and to make sense of certain discoveries” (p. 87).

To investigate the information behaviour of artists outside an academic context, community college librarian, Hemmig (2009) recruited study participants from community artists working in the Delaware River Valley region of Pennsylvania and New Jersey. Hemmig had previously conducted a review of existing literature on the information behaviour of artists, mostly in academic contexts (2008). Based on this review, he developed an information-seeking model that suggested that inspiration, specific visual elements, knowledge of materials and techniques, marketing and career guidance and current trends are all primary reasons why artists seek information. To test this model in a later study (2009), Hemmig used a modified version of the questionnaire devised by Cobbledick (1996) to ask 44 community artists about their information-seeking behaviour. His findings show the information-seeking model to be equally applicable to artists working outside academic contexts. This and other outcomes led him to claim that model as “valid in all aspects for practicing visual artists” (Hemmig, 2009, p. 698).

As use of the Internet began to increase in the general community, studies relating to the ways that artists use online information began to appear. One such study by Adams, Hardy, Russell-Sauve and Toler (2007), involving in-depth interviews with four artists working for a videogame production company, finds the Internet to be overwhelmingly the most used information source. Although also making limited use of personally owned books, magazines and image collections (mostly for inspiration) and face-to-face social networks (mostly for technical information), these artists used the Internet as their primary information source. Adams et al. describe their respondents’ online browsing behaviour as akin to Marcia Bates’s (1989) descriptions of “information browsing” and “information berrypicking” (2007, online). This mostly nonlinear strategy involves opportunistically responding to new information encountered, in ways similar to the physical browsing that many studies have shown to be important for artists using brick and mortar libraries. Hemmig (2009) makes similar reference to opportunistic searching strategies used by artists, but does not describe it as “berrypicking” as such. He is intrigued by the 100% success rate reported by his respondents seeking information and wonders if this extraordinary level of success is due to browsing strategies, which he sees as characterised by an “intentional, engaged passivity” (p. 695). Although Bates’s focus is on online searching, Hemmig is describing artists being open to the possibility of information appearing anywhere and at any time, and having no particularly fixed idea

about the form in which it will appear: fit-for-purpose information always appears sooner or later. This is supported by comments from two of Hemmig's respondents that "as an artist everything around you becomes significant" and "I hesitate to discount anything as an influence or source" (p. 689).

Koopman's (2009) research, undertaken as part of a Masters thesis at the University of South Carolina, sets out to investigate ways that visual artists use the Internet. Koopmans (p. 8) describes herself as being influenced by Kari and Savolainen's (2003) ideas about Internet searching being just one component of a larger set of activities that people use to gain information in their world. Koopmans gathered her research data by asking four artists not affiliated with educational institutions to keep diaries of their Internet activities for periods of up to three weeks. After an initial examination the data from the diaries was enhanced and clarified in follow-up interviews with each artist. Unlike those of Adams et al. (2007), Koopmans's (2009) respondents report using a wide variety of sources (books, films, etc.) and use the Internet less frequently. Her respondents emphasise the importance of mental resources, such as imagination or personal memories, as inspiration for their work. Their use of the Internet is predominantly for technical information—via product help sites—and for social networking. Although all still used physical galleries to exhibit work, the Internet was also used for this purpose. Koopmans's study shows information-seeking processes as involving cross-purpose activities, motivated by both work needs (e.g. technical information), and personal interests (e.g. social networking). These dual purposes often result in cross-format contacts such as virtual meetings online that are followed by actual meetings at gallery openings, etc. It is interesting that Koopmans's ideas about information engagement have been influenced in part by Savolainen, who is himself influenced by Bourdieu (as described in Savolainen, 1995). Savolainen's ideas about everyday life information-seeking being a particular way of life are influenced by Bourdieu's concept of habitus.

More of Bourdieu's ideas—this time those involving capital accumulation—are evoked by the results of a recent study undertaken by Mason, reported in a journal article by Mason and Robinson (2011). This study into the information practices of 78 newly graduated artists and designers shows very high use of the open Internet as an information source. Unlike the study by Adams et al. (2007) that focuses particularly on digital media practitioners, very few of Mason and Robinson's (2011) respondents work in this medium. In this case, Mason and Robinson believe financial restraints cause their study group to "strongly prefer methods of acquiring information for free. Indeed, the information behaviour of emerging artists can be

seen as being governed to a significant extent by cost implications" (2011, p. 178). Much of the Internet activity of these respondents involves using social forums that are perceived as essential "for discussion, debate and advice seeking" (p. 178) by artists intent on establishing professional networks. Although this group has yet to acquire the financial resources that will enable the purchase of art books etc. for personal libraries, it could be argued that they are amassing "capital" in other ways through building professional connections.

Many of these studies have made reference to the importance of visual images in the creative work of artists and designers (Cobbledick, 1996; Day & McDowell, 1985; Frank, 1999; Hemmig, 2009; Layne, 1994; Pacey, 1982; Phillips, 1986; Stam, 1995; Visick et al., 2006). To further explore the importance of visual images, Beaudoin (2009) undertook doctoral research to investigate the needs, retrieval and use of images by archaeologists, architects, art historians and artists. This study involves surveys and interviews with 20 respondents working in these professional areas. Perhaps not surprisingly, Beaudoin finds that the type of work undertaken (the task) and the context (the domain) are strong influences on using visual images as a source of information. Beaudoin (p. ix) describes her study as providing useful information for "system designers, image librarians and collection managers" and this is certainly true, but it may also help researchers interested in the differences between the practices of these related, but different, user groups. Beaudoin's study goes further than those undertaken previously in that she looks more closely at the ways her respondents use the images they find. In particular, she finds artists using images for background research purposes, for inspirational ideas, and to produce preparatory studies for art projects. They additionally use visual images as tools of communication and as memory aids.

Medaille's study aims to investigate the "information needs and behaviors of practicing theatre artists" (2010, p. 327). To do this she used an online survey of 73 practising theatre artists, followed by interviews with eight of those originally surveyed. Her findings show theatre artists seek information for six primary purposes: to gather information on the "historical, cultural and critical background" (p. 343) of the particular productions, for sources of inspiration generally, for information about other theatre productions, for technical information to complete particular tasks, for sourcing performance materials (e.g. scripts, music, props, etc.), and for career-related information. Although these purposes are roughly similar to those found in earlier studies (e.g. Cobbledick, 1996; Hemmig, 2009), this study particularly highlights the collaborative nature of the group's information practices, as a team effort is required to complete complex preparations within the strict deadlines of theatre

productions. In describing the collaboration, Medaille offers insights into the ways that found information is used by these theatre artists: she points out that “the back-and-forth process of independent search and group information exchange provides them with a constant source of stimulation” (2010, p. 344) and emphasises the ways that the processes of seeking, selecting and integrating new information with that already known can “result in novel products and performances” (p. 344).

From a different perspective, a citation analysis study by Ucak (2011) approached an assessment of artists’ information needs by examining the bibliographies of 83 dissertations produced by art graduates from the Hacettepe University Faculty of Art (Turkey) between 1983 and 2007. The dissertations covered a range of subjects including graphic design, sculpture, interior architecture, environmental design, painting, ceramics and glass. Ucak makes some interesting findings: for example, the most often cited sources are books, then journal articles. Painters cited more books than did other practitioners; sculptors cited more journal articles; graphic designers cited more electronic sources. Older publications were generally more cited than recent ones, but journal citations were generally more recent than those of books. Graphic designers and painters cited more recent publications whilst those working in interior architecture, environmental design and ceramics tended to cite older ones. As usual in the humanities, most cited publications (87.9%) had one author. Despite these interesting facts, citation analysis reveals little about why authors use particular resources. To try and ascertain this would require more detailed analysis of the actual theses and also, ideally, would involve talking to the authors.

Whiteside uses citation analysis in a different way in her study of artists’ and designers’ use of information, undertaken for a Master of Library Science thesis at the University of North Carolina (2010). Although not actually declaring so, Whiteside seems to take a relational approach in looking at three differing perspectives of the phenomenon of studio research in educational institutions. These perspectives are represented by the literature on “core competency” learning goals; the scholarly discourse on creative research; and the ways that students describe their own work. In an attempt to “reconcile” vocabularies associated with the narrow focus of competency accomplishment, as compared to the wider focus of creativity development, Whiteside chose to analyse 34 graduate and 20 undergraduate (honours) studio art theses, looking not only at the information sources used but at the thesis statements and the bibliography formatting. This interesting study highlights the difficulties associated with making qualitative judgments about creative research skills based on only some aspects of a

written thesis (which is itself only part of an overall degree); however Whiteside's observation that thesis statements show students "engaging with topics that are important to them on a personal level" (2010, p. 29) supports previous findings of artists being influenced by content representing both external issues and personal considerations (e.g. Koopmans, 2009).

Whilst being able to point to some parallels within those three areas of discourse, Whiteside struggles to find ways of reconciling the differing expectations associated with the uniformity of core competency development and the idiosyncratic nature of creative practitioner research. She sees art student research that is "not rooted in a written assignment" (2010, p. 28) as providing particular challenges for information literacy instruction. Here it seems Whiteside is grappling with inconsistencies associated with a librarian's ideal of "traditional" library research and the actual creative inquiry being undertaken by art student researchers, an issue that will be explored later in this chapter.

Most of the studies into the information behaviour of artists and designers so far discussed have focused on the information or services that artists and designers need and how libraries might provide such services. Despite some notable exceptions (e.g. Cobbledick, 1995; Cowan, 2004; McLaughlin, 2008; Medaille, 2010), most studies do not encompass consideration of users' experience of information found. To use Buckland's (1991) term, these studies have overwhelmingly reflected a perception of "information-as-thing" (e.g., a product or service), with little exploration of information use in practice. In some way these studies are a microcosm of the wider world of library research, where information tends to be primarily seen as some *thing* as opposed to some experience.

This dominance of this perspective means that when librarians discuss information *use*, they are usually meaning information-*seeking*. Spink and Cole, for example, point to information science research in which "the word 'use' is misconstrued … what such research is really doing is asking about the user's use of accessing channels to information sources" (2006, p. 28). Savolainen has pointed to major challenges "both conceptually and empirically" (2006, p. 1116) that hinder investigation into the actual use of information and argues that ongoing avoidance of these challenges has led to a "dearth of theoretical and methodological approaches to information use" (Savolainen, 2009, online). Although some studies have taken on the challenge, for example Chatman's (1999) small world studies of particular prison inmates using information as a form of "performance" and Todd's (1999) studies into how teenage girls use information about heroin, these are exceptions to the rule.

Because information literacy development ideally involves learning to use information in practice, studies in this area may be seen as investigations into information use. This has certainly happened, for example, in Lloyd's studies of the practices of information literacy amongst fire fighters (2004) and ambulance officers (2009), and in Lupton's studies of the ways that students from various disciplines experience information literacy (2004; 2008); but again, these represent an iceberg tip because most studies into information literacy practices still primarily focus on information-seeking. The next section of this chapter looks more closely at the information literacy movement particularly pertaining to academic libraries, and will explore the reasons for, and consequences of, this overriding focus on information searching and retrieval skills.

Information Literacy

Ideas about the need to develop information literacy first occurred in an economic context. Various reports (e.g. Behrens, 1994; Doyle, 1994) position Paul Zurkowski, then president of the Information Industry Association of North America, as the first to use the phrase "information literacy" publicly, in a 1974 proposal to the National Commission on Libraries and Information Science (NCLIS). Zurkowski saw a future workforce needing better information skills, and believed linking libraries with private sector information providers were important to make this happen. As president of an organisation aiming to "serve the interests of private, for-profit organisations concerned with the production and sale of information" (Kapitzke, 2003b, p. 55), Zurkowski's intentions were possibly not altruistic but his report has been credited with instigating the growth of library user education programs during the 1980s (Kapitzke, 2003a) and is an early example of linking information literacy to national economic growth.

Some years later, a report from the Presidential Committee on Information Literacy noted that "in an information society all people should have the right to information which can enhance their lives" and that "to be information literate, a person must be able to recognise when information is needed and have the ability to locate, evaluate, and use effectively the needed information … ultimately, information literate people are those who have learned how to learn" (American Library Association, 1989, online). The idea that workers, and ultimately the economies of Western countries would benefit from ongoing learning was supported by the disappearance of many low-skilled jobs, largely brought about by rapid technological change and by the movement of manufacturing industries to less developed countries.

Bruce believes that "the importance of information literacy to lifelong learning has captured the imagination of higher educators all over the world in a way that the earlier concepts of 'user education' and 'information skills' did not" (1997, p. 2). From a political perspective, the timing of the Presidential Committee on Information Literacy report (American Library Association, 1989) is significant because higher education in most western countries had been experiencing considerable upheaval throughout the 80s. As discussed in previous chapters, NPM reforms and the push to improve "efficiency, adaptability and flexibility" (Neave, 1998, p. 273) had been infiltrating not just higher education, but all public services. It is therefore not surprising that policy makers would be attracted to the potential economic advantages of an information-literate population, sufficiently self-motivated to multi-skill themselves through effective information use. Information literacy was further linked to economic advantage by the Presidential Committee on Information Literacy, who noted that "A good job today may be obsolete next year. To promote economic independence and quality of existence, there is a lifelong need for being informed and up-to-date" (American Library Association, 1989).

Despite the concept of "information literacy" being interpreted in many ways (Snavely & Cooper, 1997), the notion of national economic success being ultimately affected by information literacy rates led to governmental responses. In Australia Kapitzke (2003b, p. 56) comments on the government issuing a "spate of state and federal government policy documents and reports" (e.g. Australia. Dept. of Education, Training and Youth Affairs, 1999; Australia. Dept. of Education, Training and Youth Affairs, 2000; Australia. House of Representatives, Standing Committee for Long Term Strategies, & Jones, B. 1991; Australia. Ministerial Council for the Information Economy; Australia. National Office for the Information Economy, 1998; Cunningham et al., 1998) that argued for information literacy development being a sensible response to challenges posed by "the imperatives of information saturation and increased competition in the global market economy" (Kapitzke, 2003b, p. 56).

Bruce notes that librarians "determined to promote the cause of the library or information based education" were also quick to respond (1997, p. 3). By the early 90s the library profession began to see involvement in information literacy development as "a way that its members could make a contribution toward a society of lifelong learners" (Behrens, 1994, p. 317) which Foster unkindly interpreted as a public relations exercise that was "an effort to deny the ancillary status of librarianship by inventing a social malady with which librarians as 'information professionals' are uniquely qualified to deal" (1993, p. 345). Kapitzke had a similar view, that "the notion of being 'information literate' was the library profession's response to

technological change and to the proliferation of information" (2003a, p. 42). However, as technology increasingly enabled information to be more easily found, librarians were well positioned to be able to help people to use it more effectively.

The benefit of information literacy development—and the important role of libraries—began to be promoted by various professional bodies including the Australian Library and Information Association (ALIA), the Council of University Librarians (CAUL), and the Australian and New Zealand Institute for Information Literacy (ANZIIL). Related associations in the US and the UK were similarly active. At an international level, the International Federation of Library Associations and Institutions (IFLA) and UNESCO also played a role in advocating the benefits of, and urgency for, information literacy development.

As a consequence of this flurry of activity a number of influential documents and reports emerged, including the Prague Declaration (NCLIS, NFIL, & UNESCO, 2003) and the Alexandria Proclamation (UNESCO, NFIL, & IFLA, 2005). National information literacy standards were produced in the USA (Association of College and Research Libraries, 2000) and in Australasia (Bundy, 2004; Council of Australian University Librarians, 2001). Models based on sets of skills or attributes were developed to enable information literacy, e.g., the "Big Six Skills" approach (Eisenberg & Berkowitz, 1990), Kuhlthau's (1993) "Information Search Process" (ISP), and the "Seven Pillars" (SCONUL, 2001). Although the Big Six and ISP approaches were aimed at school libraries, the US and Australasian standards and the UK Seven Pillars found a ready audience in academic libraries where they still extensively inform information literacy programs.

At a time of unprecedented government regulatory involvement in higher education, the development of the Australasian information literacy standards (Appendix 2) emerged alongside other related requirements for universities to meet particular government regulated standards. In particular the Mayer (1992) key competencies report argued for universities needing not only to teach within disciplinary areas but also to ensure that students gain competencies in five generic skills (Table 9), two of which were directly related to information literacy (which in this chapter will hereafter be referred to as IL). In a letter attached as a preface to the 1992 report, Mayer describes the recommended competencies as essential for young Australians wishing to effectively participate in "the emerging patterns of work" (n.p.). This link between generic competencies and economic growth is further emphasised by the comment, "I believe the Key Competencies are fundamental to our future economic competitiveness" (n.p.).

Table 9 Mayer key competencies

Mayer Report (1992) recommended Key Competencies
(1) Collecting, analysing and organising information.
(2) Communicating ideas and information.
(3) Planning and organising activities.
(4) Working with others in teams.
(5) Solving problems.
(6) Using mathematical ideas and techniques.
(7) Using technology.

Source: Mayer, 1992, p. xv

After the publication of the Mayer Report, all tertiary education providers—including universities and TAFEs—were encouraged by the Australian government to specify the generic competencies that graduates would gain. Perhaps to take a position distinct from TAFE providers and to encompass educational outcomes more complex than competencies or skills, many universities chose to use the term suggested by Candy, Crebert and O'Leary (1994): "graduate attributes". Despite being widely used the term came to be interpreted in multiple ways, primarily because the attributes were "coloured" by each "particular institution's values and beliefs, as well as the political and social climate in which they exist[ed]" (Barrie, 2006, p. 216). From 1998, the Australian government increased regulatory requirements by demanding that universities list not only potential graduate attributes but also the actual strategies that would ensure their acquisition. This documentation was required to be submitted annually within Quality Assurance and Improvement Plans, and was a key determining factor in university funding (Australia. Department of Education, Science and Training, 2003).

From early implementation stages many Australian universities included IL in their graduate attribute statements (Pitman & Broomhall, 2009) and this inclusion has continued over time (Bosanquet, Winchester-Seeto & Rowe, 2010). This is unlike other attributes that were early inclusions but were later removed when they fell out of favour. The ongoing "popularity" of IL as a graduate attribute was probably helped by the efforts of academic librarians collaborating with faculties to introduce discipline-related IL developmental strategies. The connection of IL with graduate attributes became so prevalent that it led IL researcher Christine Bruce to ponder whether future IL research might "for political reasons" be subsumed into research into the development of graduate attributes or generic skills (2000, p.99). The second edition

of the Australian and New Zealand information literacy framework (Bundy, 2004, p. 1) cemented links between IL and graduate attributes by directly connecting the standards with both the Mayer Key Competencies and with graduate attributes.

Although the interconnection between IL and generic skills created an environment that facilitated better communication and collaboration between academics and librarians, with ensuing benefits for both, thinking of IL in terms of competencies also created problems. The first problem related to the ways that this tended to reduce the complexities of IL into a "series of decontextualized skills" (Lloyd, 2006, p. 570), ignoring the context-specific reality of information use. A competency approach, in fact, represents only one of at least six different ways of approaching IL development. Described by Bruce as existing within "six frames for informed learning" (2008, p. 24), IL development might also be approached from a content perspective (knowledge transmission mode); a "learning to learn" perspective (collaborative learning mode); a "personal relevance" perspective (knowledge construction mode); a "social impact" perspective (societal processes mode), or a "relational" perspective (multidimensional mode) (pp. 25-34). Bruce's work shows IL development as considerably more complex—and interesting—than one single perspective might suggest, and highlights the inherent inadequacy of perceiving any part of the world in only one way. Other contemporary research into information behaviour within academic contexts (for example, Boon, Webber & Johnston's 2007 study into the ways that UK English academics experienced IL, Hughes's 2009 investigation of international students using online information, the 2013 work of Maybee, et al. with undergraduates in upper level writing courses and Webber's 2013 study of academics using Second Life) also show information experienced in ways more complex than the IL standards suggest. Despite this, an emphasis on competencies still strongly influences IL development programs created in academic libraries.

A second problem associated with linking IL with competencies is related to the usual ways that competencies are taught, i.e., by breaking processes into discrete tasks and by using instructional modules that reflect a behavioural or performative approach to teaching (Bruce, 2008). Whilst useful in some contexts, a behavioural approach is systems- (rather than user-) oriented and focuses on students being able to demonstrate types of "proper behaviour" that are required by information systems (Sundin, 2008, p. 34). By giving primary attention to the ways that user behaviour might better match system requirements, the particular needs of individual learners are less considered and the potential for IL as "a catalyst for learning" (Lloyd, 2010, p. 36) are less likely realised.

The systems orientation of competency instruction also presents a third problem in that it effectively ignores the intangible or embodied aspects of information engagement that are difficult to reproduce as specific, concrete tasks. As several studies have shown, (e.g., Cobbledick, 1996; Cowan, 2004; Hemmig, 2009) intangible information is an integral aspect of informing art practice, so should be addressed in any IL development provided for this group.

Although some of the previously outlined studies have looked at the needs of art and design students, most did not consider the role of information literacy as such. However, others not already mentioned, have focused on art or design students and IL (albeit sometimes described as library or information skills instruction). For example, Gregory (2007) in a study into the information needs of studio art faculties in the southwest of the United States notes the reluctance of many studio art professors to initiate library instruction for their students. Gregory believes students interpret this reluctance as meaning that libraries are unimportant for artists, an interpretation that would be reinforced if studio students experience generic library instruction that is "not always helpful to art students, who may struggle to see the relevance … if it is not directly applicable to art" (2007, p. 58). In another study Atkins (2001) aimed to overcome faculty disinterest in library services by using a sabbatical to become more immersed in the departments of theatre and art at Hope College, Michigan. By regularly attending theatre craft and visual arts classes and associated sessions, she was able to observe the learning processes, talk to students and faculty about their needs, and develop ideas about how the library might better contribute to the curriculum. Her primary advice for those interested in "fostering information literacy in the arts" (p. 1088) is to go outside libraries and interact with faculties.

In an article that focuses on "bringing the studio into the library" Bennett discusses difficulties arising from "aligning the needs of these unique students with what are perceived as traditional library public services" and presents various methods to "successfully lure the studio students into the library" (2006, p. 38). Using focus-group interviews, Bennett realised that many art students were unaware of library services, and this led her to develop various activities such as grant application workshops for students, giving guest lectures on the alignment of library services with course requirements, and teaching undergraduate courses in research methodology.

Halverson (2008) used the springboard of a residential course on IL strategies to make changes to library services at the California Institute of the Arts. Taking part in that intensive course

gave her the insight that was necessary to interpret IL as not just skills, but as particular ways of thinking. She described difficulties associated with trying to match IL standards with this wider interpretation because the standards were "heavily focused on the purely cognitive aspects of information retrieval and evaluation", did not effectively "address the affective elements of the process", and were therefore "inadequate in any discussion of applications of IL in arts contexts": rather than just teaching the mechanics of searching, Halverson wanted to help students better understand the effects of information use on "people and their relationships to their surroundings" (2008, p. 36). It seems unlikely that this would be easily achieved by the somewhat traditional IL programs that Halverson went on to describe, but this seeming conservatism may reflect her need to provide standard, measurable learning outcomes for her college's reaccreditation processes.

In an article written to share insights gleaned from teaching research skills to industrial design students at the University of North Carolina, Gendron (2009) describes being influenced by Dervin's "sense-making" theory, which she believes has the potential to help librarians to recognise "the myriad ways in which people actively or passively gather information" (p. 27). Gendron prefers the term "knowledge counselor" to librarian, believing this wider description encompasses possibilities for teaching more than just traditional information-seeking skills by moving into areas where students learn about "generating new ideas and good questions" (p. 34). Although Gendron's article is not reporting on a study as such, her practical ideas for information literacy learning for design students, as evidenced by her own experience, provide useful information for those seeking alternative teaching strategies.

In a study that undertook to discover "the prevalence of formal information literacy requirements for studio art students", Mayer (2010, p. 146) conducted a survey of 67 art librarians who were recruited through various art library email lists. The respondents were predominantly working in US institutions, but responses also came from Australia, Canada, Dubai, Qatar, Singapore and the UK. Survey results showed that although IL activities were often provided for art students, 94% of the respondents' institutions had no art-specific IL requirements, and 69% had no formal IL requirements at all. Mayer also presented a case study outlining a particular instance of embedding IL into an introductory sculpture course offered by the Department of Art at the University of Wyoming. Mayer endorses the use of "active learning exercises and group work that focus on the various information literacy standards" (2010, p. 156) and emphasises the necessity of teaching students to become researchers and to develop as critical thinkers.

All the studies in this chapter point to artists and designers interacting with information in ways that are different from other disciplines. For those hoping to assist artists and designers with information needs, perhaps the greatest challenge arises from the intangibility of many aspects of the creative practice, which inevitably flows through into information engagement. Intangible aspects of information engagement are not only difficult for "outsiders" to come to grips with, but can also be invisible to practitioners themselves and therefore not taught to students. In the case of art and design teaching programs, this is illustrated by Day and McDowell's comments on a "marked lack of guidance from academic staff concerning information and resources which students could use" (1985, p. 33) and Gregory's comments about art faculty staff not including IL development in their programs, because they possibly "assume that the students are getting this training elsewhere" (2007, p. 59). The art librarians responding to Mayer's (2010) survey also reported a lack of "faculty buy-in regarding information literacy"(p. 151) as one of the barriers to formally embedding IL into studio courses.

Halverson recognises that effective information engagement goes beyond actions involved in the "purely cognitive aspects of information retrieval and evaluation" (2008, p. 36) but is constrained by needing measurable outcomes to provide the type of evidence required by her institution's re-accreditation processes. Gascoigne and Thornton have noted that in "an age of explicit rules and guidelines; of aims and objectives; of benchmarks and performance indicators, standardised tests and league-tables" (2012, p. 1), the prospects of allowing for intangible or tacit knowledge that is still "genuinely answerable to features of the world appear limited indeed" (p. 2). The next section will consider this from Michael Polanyi's (1962) original perspective and will explore the extent to which it is possible for experts to explicate tacit aspects of practice, so as to more directly help novices to develop expertise.

Information Engagement as Tacit Knowing

Schön's belief that "our knowing is ordinarily tacit, implicit in our patterns of action and in our feel for the stuff we are dealing" (1983, p. 49) is descriptive of many aspects of research practice, and is particularly relevant to information engagement. It has already been noted (Buckland, 1991) that from the perspective of "information-as-knowledge", information processes are primarily directed towards the actions of becoming informed; and if this is equated to researchers engaging with information, then "information engagement" can be defined as any action that informs research. These actions include the processes of thinking

about the information needed, actual purposeful information-seeking (or perhaps just an openness to serendipity), and the utilisation of information found. From this perspective, "information" is defined as anything—either tangible or intangible—that informs research.

This broad interpretation of information engagement more easily encompasses less-purposeful actions through which individuals become informed, particularly those vague, inchoate processes that can initiate something being explored. In some ways this describes the serendipitous browsing strategies reported in previously discussed studies of artist and designer information behaviour (e.g. Budd, 1989; Cobbledick, 1996; Day and McDowell, 1985; Ferguson, 1986; Frank, 1999; Littrell, 2001; Pacey, 1982; Phillips, 1986; Stam, 1995; Toyne, 1977; Trepanier, 1986), that have been likened by Hemmig to being a type of "intentional, engaged passivity" (2008, p. 354). Statements such as that described by Goodrum as "I can't say exactly what I want, but I'll know it when I see it" (2005, p. 46) aptly encapsulate this confidence that the appropriate information will eventually appear; in some ways this also relates to Michael Polanyi's assertion that "we can know more than we can tell" (1967, p. 4).

When he made that oft-quoted statement, Polanyi was not simply talking about difficulties that people have with explaining ideas in progress: he was referring to a form of tacit knowing more universal than that. Polanyi sees the historical focus of Western philosophers on explicit knowledge as causing the obscuration of equally important tacit forms of knowing (1962). Gill argues for Polanyi believing that disregard for the tacit realm of epistemological endeavours is tantamount to ignoring the broader significance and deeper nature of knowledge itself (2000, p. 8). Tsoukas suggests that Polanyi saw this disregard as the primary cause of "well established dichotomies such as theoretical vs. practical knowledge" (2003, p. 413). Polanyi argues that explicit knowledge is only ever possible because of the prior existence of tacit knowing and claims "all knowledge is *either tacit* or *rooted in tacit knowledge.* A *wholly* explicit knowledge is unthinkable" (in Grene 1969, p. 144; original italics). Adams and Mullins explain this as "what we explicitly know always relies on (or is shaped by) what we tacitly know" (1978, p. 38). Although disagreeing with some aspects of Gestalt psychology, Polanyi's thinking is influenced by that movement's idea of pattern recognition occurring through "spontaneous equilibration of visual cues or stimuli that are impressed on the retina or the brain" (Gelwick, 1977, p. 62). Similarly, Polanyi argues for individuals coming to comprehend explicit knowledge through a process of integrating particulars that are already tacitly known. This integration—or re-organisation—is realised in ways akin to the "eureka" moment but, unlike the famous experience of Archimedes, integration usually happens more subtly, beneath the direct focus

of consciousness. This subtlety means that the path by which reasoning occurs is afterwards more difficult, perhaps impossible, to remember. An example is provided by Turner who points to the common experience of "sleeping on a problem and being able to solve it on awakening" (2012, p. 389). In that and other instances, we may be very aware of the prior mental effort but may never be able to trace the exact cognitive path that eventually led to an answer. These tacit actions that enable insight are considered by Polanyi to be operating at functional, phenomenal, semantic and ontological levels (Figure 3).

1. From-to aspect – (attending **focally** to object of attention, whilst attending **subsidiarily** to other contextual clues) - the functional structure of tacit knowing.	**2.** Tacit integration – (the integration of subsidiary and focal objects changes the **appearance** of what we know) – the phenomenal structure of tacit knowing.
3. From tacit integration and changed appearance (*new meaning occurs*) – the semantic aspect of tacit knowing.	**4.** The functional and phenomenal and semantic aspects of tacit knowing combine – (*creating new understanding, i.e. something that is more than the sum of its parts*) – the ontological aspect of tacit knowing.

Figure 3 Four dimensions of tacit knowing

Source: Author, 2010, p. 6 (adapted from Polanyi, 1967, p. 9-13).

Jha offers another way of understanding these various aspects of Polanyi's theory of tacit knowing by visualising them as "three models tied together by the central feature of intellectual passions as integrator". She identifies these models as:

> the *Gestalt-Perception Model* based on the gestalt notion of part-whole relations; the *Action-Guiding Model*, incorporating the phenomenological-existential notion of intentional action; and the *Semiotic Model*, an abstract conception of action directed to meaning, showing that tacit knowing has a "from-to" structure. (2002, p. 51; italics added)

Polanyi's ideas about "intellectual passions" encompass commitments that individuals make when deciding a particular intellectual or epistemological stance is true for them. Although these decisions are ultimately personal, they are also influenced and guided by particular communities of practice. Polanyi's background often led him to explain "intellectual passions" with examples from science, pointing to shared scientific assumptions, agreed interpretations of "scientific value", and the checks and balances of peer review within scientific communities

(Polanyi, 1962). Similar influences—in different ways—might be discerned in other communities that involve personal commitments that are reinforced by shared values and rules of conduct. Although Polanyi's "intellectual passions" seem somewhat more altruistic than Bourdieu's ideas about the influence of habitus, there are complementary aspects, particularly in Bourdieu's ideas about social agents' "interest" (Grenfell, 2008) that describes intellectual commitment to, and investment in, the accepted norms of particular social fields.

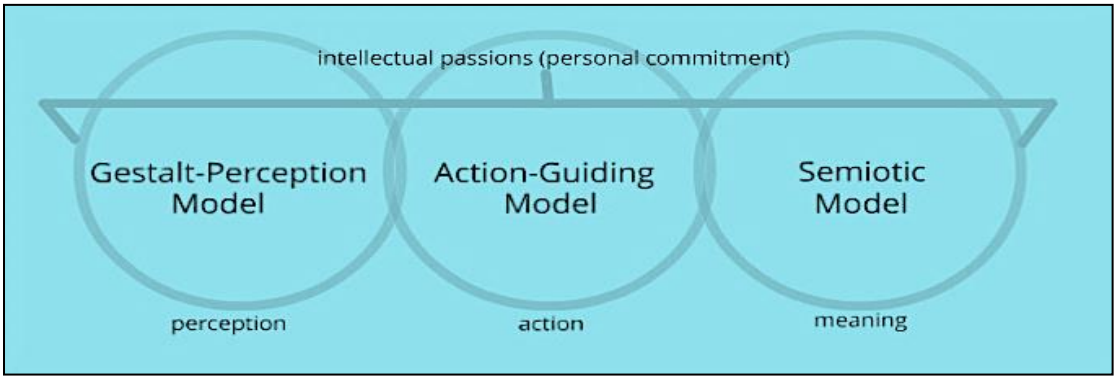

Figure 4 Jha's three models of Tacit Knowing Theory and "intellectual passions"

Source: Created from information provided in Jha, 2002.

As shown in Figure 4, "intellectual passions" provide an interconnecting element that flows through each of Jha's (2002) suggested models. In the case of the Gestalt-Perception Model, "intellectual passions" provide a caution that perceptions can be deceiving; that belief in scientific insight can sometimes be mistaken; which supports the vetting process of peer review. In the Action-Guiding Model, "intellectual passions" provide energy for the heuristic striving of individuals towards goals shared and encouraged by other members of the same community. In the case of the Semiotic Model, "intellectual passions" are transformed "from a commitment into a vector" (Jha, 2002, p. 65). This vector (from-to) plays a role in "guiding non-strict rules of inference (tacit inference) aiming towards meaning in scientific insight" (p. 66). "Intellectual passions" in this case illuminate particular ways of identifying meaning in the world. As Polanyi says,

> we may say that when we learn to use a language, or a probe, or a tool, and thus make ourselves aware of these things as we are of our body, we interiorize these things and make ourselves dwell in them. Such extensions of ourselves develop new faculties in us; our whole education operates in this way; as each of us interiorizes our cultural heritage,

> he grows into a person seeing the world and experiencing life in terms of this outlook. (in Grene, 1969, p. 148)

From this perspective, tacit knowing operates within subsidiary dimensions of the researcher's mind, but Polanyi does not perceive this process as "unconscious, preconscious or subconscious" (Sanders, 1988, p. 6): just as ancillary to the focus of attention. So, for example, tacit knowing guides research and practice preferences, helping researchers to identify particular significance or recognise new connections. Each researcher, immersed in different information worlds, uses tacit knowing to recognise and synthesise salient features of that world in the process of creating new knowledge. Erich Harth encapsulates this in his description of the human mind as "the joiner … fitting together disparate elements of the world to make objects, systems, scenarios" (1995, p. 9). This process is predominantly tacit, particularly in art and design practitioner research, where much knowledge acquisition comes about through the processes of making. Many creative practitioners describe their work as intuitive, and Polanyi would see this as arising from tacit knowing working alongside and into explicit thought to inform decisions, choices and actions. Clark Moustakas underscores this when he describes intuition as "the bridge between the explicit and the tacit, the realm of the in-between" (1990, p. 23).

Like Buckland's (1991) ideas about information as the process of coming to knowledge, Polanyi always sees tacit knowing as involving being active in the world. This is reinforced by Jha's (2002) Action-Guiding Model, which encompasses the existential-phenomenological or intentional action aspect of tacit knowing. Here the focus is on the ways that knowers actively move between focal and subsidiary awareness as they seek meaning. Incorporation of this active element allows the tacit knowing theory to encompass skilful bodily performance more effectively, better enabling Ryle's (1949) "knowing that" (underlying theories) and "knowing how" (actively applying those theories) to be seen as different dimensions of complexity within a wider spectrum of knowing.

Research (e.g. Ericsson & Lehmann, 2011) has shown expertise to result from thousands of hours of deliberate practice as individuals gradually develop the capacity to discern information patterns that are unnoticed by novices. This ability provides experts with "cognitive shortcuts" (Hinds, 1999, p. 26) that significantly enhance remembering, reasoning, and problem-solving within particular domains. If "cognitive shortcuts" become too deeply ingrained however, they can negatively affect the ability of experts to teach their skills to

others. This is illustrated in research undertaken by Nathan and Petrosino (2003) that finds an inverse relationship between high levels of expertise and teaching ability. It shows advanced abilities or domain knowledge as generating “expert blind-spots” (p. 906) that lead to experts underestimating task difficulty or overestimating novice skill levels. In effect, experts tend to “forget what is easy and what is difficult for students” (Bransford, Brown & Cocking, 1999, p. 44).

An underestimation of the difficulties associated with information engagement in a university research context may particularly affect many art and design practitioners who are new to that environment. Problems can arise from the fact that the creative making process is always the primary focus and information engagement processes are usually incidental to this. That can cause information engagement to be overlooked—or underemphasised—by undergraduate curriculum developers, leading to students not being given the types of learning opportunities that allow gradual development of the information engagement abilities that are most effective for research.

Experts who are supervising research students may underestimate potential difficulties or overestimate student ability to engage with information, which can lead to those students experiencing difficulties unnecessarily, often because they lack the relevant experience to recognise their needs. Learning through trial and error is possible but not ideal, as indicated in research (Brehmer, 1980, cited in Day, 2010) showing guided learning as much more effective than that which occurs through self-teaching. This is reinforced by considerable research (e.g., as described by Ericsson & Lehmann, 2011) showing that the development of expertise requires not only continual practice but also expert guidance.

When beginning a research degree, novice practitioner researchers are unlikely to be taught about how information engagement for creative making is similar, or different, to that required for university research. That sort of discussion doesn’t occur because engagement with information is mostly tacit knowledge for experts, who may see it as a type of knowing that arises through practice. Gerholm, when commenting on the progress of novice researchers, sees them needing “a considerable amount of know-how” that will be “acquired slowly through the interaction with others and without anyone ever making a deliberate effort to teach … the newcomer the rules of the game”, he suggests that failure to pick up these mostly unarticulated rules will “undoubtedly affect the student’s standing within the group” and “may considerably increase his or her difficulties in making the grade” (1990, p. 263). In

the case of information engagement for practitioner research, confusion about how to balance such rules within a creative making practice, can unnecessarily increase the difficulties experienced.

Sometimes Polanyi's widely quoted statement that "we can know more than we can tell" (1967, p. 4) is interpreted as meaning that tacit knowledge cannot be taught. Collins (2010) argues that this interpretation fails to consider different types of tacit knowing which he describes as either weak (in a relational sense), medium (in a somatic sense), or strong (in a collective sense). Weak tacit knowledge is only tacit because it *isn't* verbally articulated, not because it can't be. Such knowledge might be kept secret, for example, to sharpen the observational skills of learners: as in Collins's instance of learning a craft skill in Japan, where it is often described as "stealing the master's secrets" (2010, p. 93). Weak tacit knowledge might also be "ostensive", whereby it is not deliberately concealed but can only be taught through showing examples. Again, this knowledge could be articulated in order to teach it, but communicating it through participation or interaction in particular activities is seen as more effective. The third type of weak tacit knowledge Collins describes as "logistically demanding" because, although it could potentially be articulated, it would be unrealistically demanding to do so. Collins uses the example of a storeman, with an encyclopaedic knowledge of warehouse stock, locating items that others cannot. Although this tacit knowledge could be communicated, perhaps through a computer database, the immensity of the work involved in creating the database may inhibit this (2010, p. 94). Weak tacit knowledge might also involve mismatched saliences (pp. 95-96) that can occur when people have differing understandings of particular terminology but do not realise this is so; this might be illustrated by a previous example whereby both researcher and supervisor understand what a "critical assessment of relevant literature" means, but each understands it differently. When people mistakenly assume that others see the world as they do, misunderstandings can continue undiscovered. A final example of weak tacit knowledge relates to some types of knowing being simply unrecognised, especially when expertise is developed unreflectively, as described by Collins: "A is just lucky enough to stumble on the right way of doing things … B is never going to be told about such things … because neither A nor B knows that they are worth telling" (p. 96).

Medium (somatic) tacit knowledge involves embodied knowing, for instance as in knowing how to ride a bike. This knowing can be articulated, but learning to cycle still requires actually doing it. Despite this need for the learner's bodily involvement, aspects of cycling are still

"taught": so even if physical actions can't be totally explained this type of somatic tacit knowing can, to some degree, be taught. Collins comments that

> there is nothing philosophically profound about Somatic tacit knowledge, and its appearance of mystery is present only because of the tension of the tacit with the explicit … if we did not make the mistake of thinking this is central to the understanding of knowledge, we would find nothing strange about our brains' and bodies' abilities to do things we call tacit. (2010, p. 117)

By comparison to weak and medium tacit knowledge, strong tacit knowledge involves social sensibilities developed through immersion in the discourses and practices of society (Collins, 2010, p. 133). Collins calls this knowledge "strong" because of the mystery still associated with this human capacity to "absorb social rules from the surrounding society – rules that change from place to place, circumstance to circumstance, and time to time" (p. 124). Unlike computer programs that can beat master chess players at their own game, ordinary social adaptability cannot, at least so far, be likewise programmed.

If these ideas about different forms of tacit knowing are applied to the previously discussed problems experienced by novice researchers (information engagement skills overlooked because they are peripheral to making; experts forgetting they once had difficulties; understanding the special requirements of university research), all could be attributed to either mismatched saliences or unrecognised knowledge. Although it is not always possible to analyse tacit knowledge in exact and explicit detail, this does not stop experts and learners discussing the essential aspects of any given process (Moss, 1995) and supports the possibility of tacit information engagement practices ultimately being able to be taught. To get experts to teach their tacit knowledge, Richard Sennett argues that we need to "pester them to explain themselves" so that they "dredge out the assemblage of clues and moves they have absorbed in silence within" (2008, p. 78). Other possibilities for accessing or communicating tacit knowing are via storytelling or narrative (Denning, 2001; Kupers, 2005; Linde, 2001; Peet, 2012) or through collaborative projects (Alony, Whymark & Jones, 2007; Jacobs, 2007; McGlashan, 2011; Zaqout & Abbas, 2012). Others share Polanyi's belief in the efficacy of communicating tacit knowing through master/apprentice relationships (Lave & Wenger, 1991; Oakeshott, 1962) or through communities of practice (Duguid, 2005; Wenger, 1998).

Although most of the previously discussed studies into the information practices of artists and designers have not considered intangible aspects of information engagement, both Hemmig (2008) and Cowan (2004) come close to describing tacit knowing. In Hemmig's case it was through his discussion of artists using "intentional engaged passivity" whilst information gathering; and in Cowan's case through her respondent's information behaviour that was characterised by a "receptive stance … open to accident, to experimentation, and willing to engage with whatever comes her way" (2004, p. 18). By involving perceivers who actively and passionately integrate clues from the environment as modes of seeking meaning (Lewis, 2012) this type of information behaviour directly links to Polanyi's ideas about tacit knowing.

Chapter Summation

This chapter has explored information engagement practices of artists and designers, first from the perspective of previous studies in this area, then in terms of the impact of the information literacy development movement, and finally by considering information engagement as a form of tacit knowing. Each of these aspects represents differing dimensions of the overall process of information engagement. As in previous chapters, Bourdieu's "thinking tools" of habitus, capital and field will be used for the purposes of review; in this chapter it is habitus that is particularly relevant. Again, this summation is not intended to be a Bourdieuian analysis as such, but rather uses the concept of habitus as a particular lens through which to review this chapter.

The first section of this chapter surveyed previous studies of the information behaviour of artists and designers, finding the vast majority of the authors were focusing on either information needs or information-seeking. As most of the studies were undertaken by people working in, or associated with, libraries, it is reasonable to associate that predominance of focus with a library-world habitus, i.e. with the particular ways that the authors perceived the world around them. Bourdieu (1990) considers habitus to be a "system of structured, structuring dispositions … always constituted in practice" (p. 52). This means that the habitus is itself a structure, that is governed internally by sets of dispositions acting to influence the perceptions, appreciations and, ultimately, practices of individuals or groups. In particular fields of inquiry (such as in librarianship, for example), the habitus determines "the kind of problems that are posed, the kinds of explanations that are offered, and the kinds of instruments (conceptual, methodological, statistical) that are employed" (Brubaker, 1993, p. 213). Many of the studies discussed in this chapter focus primarily on finding and access to

information, but fail to follow through to explore acts of using and understanding the information found. On the face of it, this represents an unevenly balanced perspective, because whilst finding and accessing information is undeniably important, it is ultimately futile if found information is not effectively used or understood. The predominance of focus on finding and access shows not only the strength of a particular habitus but also the influence of field doxai, that is, the "field-specific beliefs that inform the shared habitus of those operating within the field" (Deer, 2008, p. 125). As earlier discussed, the doxa tends to override competing beliefs, and usually reflects "the viewpoints of those who directly or indirectly dominate the field" (De Clercq & Voronov, 2009, p. 807). Despite the dominance of that influence, within any given field there will always be individuals sharing a similar habitus, who accept the dominant doxa to a greater or lesser extent (Maton, 2008, p. 57). This shows that the influence of the doxa is not necessarily immutable. As suggested by Crossley, the dynamic nature of social fields that are affected by external change and by the "innovative actions by embodied agents [who] can both modify existing structures and generate new ones" means that the doxa itself can change, or at least can be somewhat modified (2003, p. 44).

An example of competing beliefs is presented in articles extolling the benefits of specialist art (academic) libraries (Day & McDowell, 1985; Nilsen, 1986; Pacey, 1982). Here the emphasis is on meeting the particular needs of specialised information users, albeit still from the perspective of finding and access. Later studies explored possibilities for more generalist library services being able to provide for those specialised needs (Downey, 1993; Frank, 1999). It is notable that in the upheaval of rationalisation, the finely tuned, specialised libraries of Day, McDowell, Nilsen and Pacey were ultimately closed down. From the perspective of libraries being primarily in the business of finding and accessing information, specialised assistance might be perceived as an anachronism in a world of online information that can be found and accessed anywhere, anytime, without intermediary assistance. In this scenario, uniformity and economies of scale gain importance, and specialist services in the use and understanding of information are more likely seen as wasting resources. That point of view reflects the doxa of economic rationalism.

In the context of tertiary education, the dominance of the idea of libraries being primarily in the business of information finding and access has flowed over into the activities of information literacy development. It may have been Gendron's intention to step back from this when she re-described herself as a "knowledge counsellor" (2009, p. 27), which she saw as "simply as a way to explore the concept of librarians working in a knowledge-seeking

environment as opposed to the more traditional one of information seeking" (p. 28). Conceivably, her experience as both an academic and a librarian gave her insight into the ways that habitus can both help and hinder information literacy development. Stepping away from the role of librarian perhaps allowed her to see more clearly the inadequacy of focusing only on "information-seeking" when students must ultimately learn to create new knowledge. By comparison, Whiteside (2010) reflexively sought to explore tensions between the expectations of "core competencies" and art students' actual research practices, yet was seemingly not reflexive about the core competency approach itself.

Although ideas about the economic importance of core competencies (Mayer, 1992) arose from fields outside librarianship, the incorporation of these ideals into the Australian and New Zealand IL standards (Bundy, 2004) and the subsequent preoccupation with teaching IL as sets of "generic skills" fitted comfortably with a predominant focus on finding and accessing information. Use and understanding (constructing new concepts/creating new knowledge) is included in the standards, but in reality this is often assumed to be outside a librarian's responsibility. This assumption means "information literacy" is increasingly seen as a particular set of generic skills that enable seeking and selecting appropriate information; in practice it focuses on skills that enable finding information for essays. As noted by Lloyd, there is an underlying expectation that these generic skills will be transferable to all contexts requiring engagement with information, without consideration of the ways that "context is a central feature that influences and determines information experience" (2010, p. 157).

Bourdieu saw practical participation in any social field as being related to the application of both practical and reflexive knowledge (e.g. as discussed in Schirato & Webb, 2002). Acquisition of practical knowledge does not usually involve reflexivity because it develops over time through the experience of day-to-day functioning within particular social fields. The studies discussed in this chapter can be described as demonstrating practical knowledge, but also reveal varying degrees of reflexivity, that is reflected in the researchers' aim for better understanding that can be shared with others. Despite that reflexivity, most of those studies have tended to stay within traditional parameters of "finding" or "accessing" information and this might be explained by Swartz's assertion that "reflexive practice itself takes place within socially determined conditions" (1997, p. 276). Maton (2008) argues that this is why Bourdieu "encourages us to adopt a relational mode of thinking that goes beyond surface empirical practices to excavate … underlying structuring principles" (p. 61).

The notion of looking beyond surface appearances also links to ideas about the importance of tacit knowing in the practices of artists and designers, (albeit often in the guise of "working intuitively"). When describing knowledge that is difficult to communicate, Mareis has pointed to this "speechlessness to which practitioners have often attested" (2012, p. 62), and in this sense the prevalent belief that tacit knowing is practically silent becomes part of the creative practitioner habitus. Despite that belief, as Collins (2010) has attested, tacit knowing can often be readily articulated, if enabling circumstances arise.

Polanyi and Bourdieu are in some ways similar, in that both are relational thinkers, both are interested in cognitive processes at the periphery of focal attention, and both see personal knowing as influenced by actions within wider contexts. Both Polanyi and Bourdieu were affected by the tragedy of war, in Polanyi's case World War II, and in Bourdieu's the Algerian independence war (1954-1962). Atrocities committed in those engagements convinced Polanyi of the need to ameliorate science's "perversion of morality by the ideal of strict objectivity" (1970, p. 975) and influenced Bourdieu's argument for the need to draw attention to the social conditions of thought thereby offering "the possibility of a genuine freedom with respect to those conditions" (2000, p. 118). Both Polanyi and Bourdieu experienced personal and professional experiences that made them feel like outsiders in their own academic communities, an experience that clearly influenced their thought and ultimately became an intellectual asset. Mitchell suggests that Polanyi's "outsider" status led him to being "in a sense, immune to the commitments and distractions of contemporaries, who generally approached their subjects in a more traditional fashion" (2006, p. 6). Similarly, Bourdieu rejected conventional practices that insisted on the prior importance of constructing theory to be tested it in the field. Breaking those conventions, Bourdieu commenced in the field, "constructing and using data, doing interviews, conducting large empirical research with a team or laboratory of social scientists" (Bigo, 2011, p. 228) then later developed theory from that data.

The ability to observe the familiar as if through the eyes of a stranger led both Polanyi and Bourdieu to seek explanations about habitual ways of thinking that enable and constrain individuals' relationships with the world, but neither concluded that these are inherently unchangeable. Polanyi sees the processes involved in "tacit integration" (Figure 3) as continually changing the appearance of what is known and through this creating new meaning. Similarly, Bourdieu sees habitus as representing "an open system of dispositions that is constantly subjected to experiences, and therefore constantly affected by them in a way that

either reinforces or modifies its structures" (Bourdieu & Wacquant, 1992, p. 133). Despite the nature of habitus causing it to be ordinarily taken for granted, and therefore largely invisible, this need not always happen. For example, Reay suggests that an awareness of the nature of tacit knowing can help create possibilities for communication and teaching to others, reflexive consideration of core beliefs and assumptions can bring habitus to the fore, where it can "operate at the level of consciousness and the person [can begin to develop] new facets of the self" (2004, p. 438).

It could be argued that Polanyi and Bourdieu have looked at different dimensions of the same essential dilemma of what it is to be human, Polanyi beginning from a personal perspective and Bourdieu from a social. If considered from the viewpoint of art and design, Polanyi's tacit knowing theory draws attention to the ways that tacit integration contributes to the creative process, and in particular to the role that the ontological aspect of tacit knowing (Figure 3) plays in the discovery of new insight. He sees the highest forms of tacit integration as being "manifested in the tacit power of scientific and artistic genius" followed by the "expert diagnostician", [then] "the performance of skills, whether artistic, athletic, or technical" (Polanyi 1967, pp. 6-7). In a similar way, Bourdieu's "thinking tools" (fields, habitus and capital) draw attention to the tacit influence of social rules— or field logic—on individual practice, and the ways that the particular dispositions of the habitus are rewarded through capital accumulation in some fields and not in others. To be successful in universities, novice art and design practitioner researchers need to develop personal tacit knowing that enables creative practice and also social tacit knowing to enable research practice in a university context. Many novice art and design researchers already embody the types of tacit knowing that can enable creative practice, but lack the same familiarity with university contexts. In the first instance, years of work within particular creative communities means that habitus and field are attuned, in ways that Bourdieu describes as "the pre-verbal taken-for-granted … that flows from practical sense" (1990, p. 68). In the second instance, less can be taken for granted because the habitus and field are less attuned. The academic terrain can feel alien, as novice researchers feel their way through, seeking acceptable paths through seemingly arbitrary rules. Effective information engagement is interwoven within both of these personal and social dimensions of tacit knowing. This means that when assisting novice researchers to engage with information, it is important to consider the particular contexts within which these researchers work.

Greene has noted that taking “a stranger’s vantage point on everyday reality is to look inquiringly and wonderingly on the world in which one lives … like returning home from a long stay in some other place” (1973, p. 267). In a similar way, it is necessary for librarians to step away from the library-world habitus to reflexively appreciate the information world of artists and designers. Reflexivity has the additional advantage of enabling an acknowledgment of the relational nature of all social interpretation. Although believing that an individual’s knowledge is always essentially personal, Polanyi also sees it as “entirely relational and embedded in people’s responses to different contexts and conditions” (Peet, 2012, p. 47). For Polanyi, knowledge creation is not about seeking something new “out there”, but is “a relational process taking place within situated practices, developed in activities of knowing and practicing” (Oguz & Sengun, 2011, p. 455). In his study into French academia (1988) Bourdieu similarly argues that the field of intellectual production is more than just a field of ideas “but also one of “structured and structuring institutional relationships and positions that are valorized and energized relationally” (Moore, 1990, p. 90). Bourdieu identifies his concepts of field and habitus as tools because they allow researchers to analyse relationships between these aspects of practice, with less likelihood of being blindsided by the practices themselves (Wacquant, 1990). This reinforces an understanding of the complexity of consciousness that “is always a consciousness of things or ideas in relation” (Moss, 1995, p. 26).

Using a relational frame when developing opportunities for novice researchers to learn to use information effectively requires prior identification of the critical ways that experts in those fields inform their work (Bruce, 2008). Better understanding of the range of ways that experts engage with information can allow librarians to not only reconsider their own assumptions about effective information engagement, but can also confirm the relevancy of novices’ prior knowledge in what is, to many of them, a new research environment. As noted by Bourdieu, a relational perspective does not dictate any particular research method, but encourages the adoption of any or “all the techniques that are relevant and practically usable, given the definition of the object and the practical conditions of data collection” (in Bourdieu & Wacquant, 1992, p. 227).

As a way of stepping outside the library-world habitus to better explore the information world of artists and designers, this study heeds Cowan’s conviction that “the only way we will gain the understanding we need in order to be truly user-centered rather than prescriptive is by talking to the artists themselves” (2004, p. 19). Although the tacit nature of artist and designer’s information engagement practices may prevent all aspects being fully articulated,

some aspects can be. As Tsoukas has noted, “we can command a clearer view of our skilled performances if we ‘re-mind’ ourselves of how we do things, so that distinctions, which we had previously not noticed, and features, which had previously escaped our attention, may be brought forward” (2003, p. 410). This is true for accessing the tacit knowing of art and design practitioners, and equally so for examining the ways that the librarians’ expertise constrains their understanding of how best to assist novice researchers. The next chapter will introduce the study itself by providing an overview of the chosen data collection/analysis method and the reasons for this choice.

Chapter 4:
Study Background, Design and Processes

This study into the ways that art and design practitioner researchers experience information engagement within university research practices has been undertaken in two parts. The first part, presented in the previous chapters, explored the overall context within which information engagement generally occurs. The second part, which begins with this chapter, narrows to explore a specific context experienced by a particular group of practitioner researchers. Whilst discussing study design and method choice, etc., the relational perspective, as presented in previous chapters, is continued. Thinking relationally requires a consideration of interconnections between circumstances that arise as a consequence of other circumstances, and the impact of each on the other. Bourdieu emphasises such interconnectivities when he says that "the real is relational" (1988, p. 3), by which he means that all social practices, from the massively collective to the most uniquely idiosyncratic, are created by, and also contribute to, the contexts within which those practices occur.

A relational perspective inevitably requires reflection on the impact of my own role as a librarian within the context of this study, and in particular on the ways that the study design, method, and so on, are ultimately products of both the general research context and my own personal biography (Page, 1997). Prior to undertaking this study I worked for many years as a librarian in the library of an art and design faculty located on a satellite campus of a major research university. In this relatively small library (as compared to the library on the main campus), I was one of a small team of people providing services for academics and students, and a large part of my work involved helping commencing research students. In general, the research assistance given to novice researchers tended to begin with some form of dialogue about their particular research needs, which would be followed by a one-on-one session where they would be introduced to information sources that might be of use to them. Some students needed only one session—after which they were able to make their own way with occasional assistance—whilst others required several sessions before becoming similarly confident.

Often these students would tell me that "university" requirements for information engagement were very different to their usual methods of informing their work. The success or otherwise of any interaction that I had with these students seemed very much to depend on my ability to make connections between their usual methods and those required in a

university research context. My success in finding connections seemed very hit and miss, and I realised that I needed better overall knowledge of the variety of ways that art and design practitioner researchers actually engaged with information and began to search the literature for more. As outlined in Chapter 3, most of the found literature related to studies into the types of information artists needed or their preferred search methods, but yielded little about information engagement (post-finding). In addition to studies about artists and designers, I was also reading about information use generally, including Bruce's (1997) seminal text *Seven Faces of Information Literacy.* This book discussed Bruce's doctoral research, which had identified a range of understandings of information literacy amongst higher educators. At the time of reading this book I was involved in a work project that aimed to integrate information literacy activities systematically into all art faculty courses. From an immediately practical point of view, Bruce's research provided a useful communication tool for discussing that project with academics, because it gave me a wider repertoire of explanatory approaches. Even more significantly, in terms of this research, Bruce's book introduced me to the phenomenographic research approach and I was able to see some similarities between that and my own informal search to learn more about creative practitioners using information. Further reading about phenomenography encouraged me to consider expanding into a more formal study that might generate outcomes that could be shared with other information professionals.

As this study gradually emerged from theoretical considerations of practical experiences, the process provided opportunities to step back from the day-to-day pragmatics of service provision and to look at the context within which the service is provided, both in terms of the wider university environment and the more specific context of art and design practitioner researchers. As already mentioned, other studies into the information behaviour of artists and designers provided valuable evidence of information sources and search preferences, but artists' and designers' experience of found information had been largely unexplored. This study aims to begin to fill that gap by using a phenomenographic approach to explore and describe those experiences; and this chapter focuses on phenomenography by providing a general overview of the approach and by outlining the specific ways it has been used in this study.

Phenomenography – Historical Aspects

Phenomenography is a qualitative, empirical research approach, originally developed in Sweden during the 1970s by educational researchers Marton, Saljo, Svensson and Dahlgren, at the University of Gothenburg. In a way similar to Bourdieu's, whose concepts were "pragmatically forged out of empirical research and confrontation with opposing intellectual viewpoints" (Swartz, 1997, p. 5), phenomenography evolved as a pragmatic alternative to the then predominant focus on psychology in educational research. Dissatisfaction with "existing psychological conceptions of knowledge and learning" (Entwistle, 1997, p. 131) provided the impetus for seeking an alternative approach that would allow a refocusing of attention on the actual experiences of the learner.

The basic premise of a phenomenographic approach is that people experience and understand various aspects of their world (phenomena) in qualitatively different ways and that critical aspects of these differences can be identified and described. The importance of the differences is that they can illuminate otherwise hidden aspects of individual practices that might be invisible to practitioner researchers themselves. Marton comments that

> we are seldom aware that our understanding of a phenomenon does not match someone else's understanding. We are not even aware that we see the world in an individual way. We believe tacitly that we see the world as it is; without further reflection, we take it for granted that others see it exactly as we do. (1992, p. 254)

Although most phenomenographic studies begin by exploring the experiences that individuals within particular groups have with a certain phenomenon, the ultimate aim is to better understand that experience in a collective sense. Akerlind notes that phenomenographic outcomes aim to represent "the full range of possible ways of experiencing the phenomenon in question, at this particular point in time, for the population represented by the sample group collectively" (2005d, p. 323). The idea of being able to represent *all* the possible ways that a particular phenomenon is experienced might seem too large an undertaking if not for the fact that phenomenographic studies have consistently found that within particular groups, "whatever phenomena people encounter they experience in a *limited* number of qualitatively different ways" (Marton & Booth, 1997, p. 101, italics added).

Historically, phenomenography was developed to investigate learning experiences, but over time has expanded to encompass other social experiences, becoming increasingly used in studies that are "interested in describing how people conceive of various aspects of their reality … in most cases … in everyday life rather than in course material studied at school" (Marton, 1986, p. 37). Marton has described this more general form of the approach as "pure phenomenography" (p. 38). In an examination of all the phenomenographic research previously undertaken at the University of Gothenburg, Hasselgren and Beach (1997) have identified five different modes that they describe as experimental, naturalistic, hermeneutic, phenomenological and discursive.

Experimental phenomenography, which tended to be the earliest work undertaken, involved experimental explorations of particular learning situations, using sample and control groups to identify interconnections between students' approaches to learning and their educational outcomes (Hasselgren & Beach, 1997). By comparison, "naturalistic" phenomenography involved researchers observing participant activities in "natural" contexts without interruption (e.g. no interview, but recording researcher observations), and using phenomenographic techniques to analyse and describe resulting data. Hasselgren and Beach saw hermeneutic phenomenography as involving analysis of existing artefacts in hermeneutic ways: for example, "interpreting texts or statements not originally made for the purpose of phenomenographic analysis in terms of their whole-part relations" (p. 198). Phenomenological phenomenography was obviously seen as more closely resembling classic phenomenology. Hasselgren and Beach's example was Dagmar Neuman's (1987) study into the origins of arithmetic skills in young children, where "contrary to most other phenomenographic studies in which people are talked with about different phenomena 'in general' … [this] asks for descriptions of what is actually going on in the subject's mind during the interview" (Hasselgren & Beach, 1997, p. 199).

Discursive phenomenography they saw as being essentially like Marton's (1986) "pure phenomenography", but chose to avoid that term because they believed "there is no such thing as pure phenomenography … [it] is actually a collection of variegated and pragmatic responses to the demands of investigating a particular kind of research object under different conditions" (Hasselgren & Beach, 1997, p. 197). Like Marton's "pure phenomenography", their discursive phenomenography examples were not directly linked to particular educational courses. It might be argued that by not being directly connected to educational outcomes a layer of complexity is removed, because results are not deployed immediately for pedagogic

purposes. This might be why they describe the discursive mode as “the least sophisticated way of doing phenomenography” (Hasselgren & Beach, 1997, p. 197).

At a later date, Bowden defined a particular type of educational phenomenographic research as “developmental phenomenography”, which “seeks to find out how people experience some aspect of their world, and then to enable them or others to change the way that their world operates, and it usually takes place in a formal educational setting” (2000, p. 3). Bowden’s description was a particular influence on the development of this study, which similarly aims to use the experience of researchers already working in a university environment to help novice researchers. Recent advances within phenomenographic research involve a more particular focus on learning and teaching through the development and ongoing refinement of variation theory (Marton & Pong, 2005; Marton & Tsui, 2004) for use within specific learning cohorts. Tan posits that variation theory has been significant in terms of using phenomenography for both “research and pedagogical purposes in contemporaneous ways” (2009, p. 107). Although this present study is not directly connected to any particular educational program and is therefore most like Hasselgren and Beach’s (1997) “discursive” phenomenography, variation theory provides a potential tool for future applications of its outcomes.

Phenomenography – Ontological and Epistemological Assumptions

It is commonly believed that core assumptions about ontology (the nature of reality) and epistemology (the nature of knowledge) will significantly influence the research approach of any particular study. In the spirit of making the basic assumptions of phenomenography more transparent, this section aims to clarify the ontological and epistemological underpinnings of this approach.

In a broad sense phenomenography is a qualitative research approach, but as this “crosscuts disciplines, fields and subject matters” (Denzin & Lincoln, 2005, p. 2), within a “fluid, sprawling field that is still growing and changing” (Lee, 2012, p. 404), the term “qualitative” provides little in the way of explanation. A narrower definition of phenomenography positions the approach as qualitative and interpretive. The interpretive paradigm is grounded in humanistic philosophy (Higgs, 1997, p. 6), and research within this paradigm “assume[s] that people create and associate their own subjective and intersubjective meanings as they interact with the world around them” (Orlikowski & Baroudi, 1991, p. 5). From another perspective, Lupton

(2008, p. 55) argues for phenomenography being situated within a constructivist-interpretive paradigm, and she quotes Denzin and Lincoln who describe it as assuming "a relativist ontology (there are multiple realities), a subjectivist epistemology (knower and respondent co-create understandings) and a naturalistic (in the natural world) set of methodological procedures" (2000, p. 21).

As phenomenography was originally developed to answer empirical, pragmatic research questions, early researchers did not initially see the need to explicitly "spell out philosophical commitments" (Hasselgren & Beach, 1997, p. 192). Practical beginnings and the consequent lack of articulated metaphysical foundations have led some to argue for phenomenography representing a somewhat neutral stance, as implied in Svensson's statement that "Individual researchers doing phenomenographic research may have certain metaphysical assumptions but these vary. It is possible to have any and all of the metaphysical positions within the main categories of materialism and idealism and still do phenomenographic research" (1997, p. 165). This flexibility is perhaps underscored by the fact that phenomenography is not claimed as a method but as an approach. As Marton and Booth explain, "phenomenography is not a method in itself … [it] is rather a way of—an approach to—identifying, formulating, and tackling certain sorts of research questions" (1997, p. 111). Despite this flexibility, phenomenography is underpinned by an ontological presupposition that reality is essentially relational. In this, phenomenographers share Bourdieu's conviction that reality only becomes "real" through experienced relationships between individuals—or groups of individuals—and various aspects of their world. Although Bourdieu's convictions about relational realities reflect a wider framework than the more specific phenomenographic understanding of "relational" occurring as a consequence of relationships between a subject (person) and an object (phenomenon), it is likely that phenomenographers would concur with his belief that reality is "nothing other than the structure … a set of constant relationships" (1987, p. 3). Marton and Booth describe this non-dualist perspective of the phenomenographic approach as being based on the assumption that "there is not a real world 'out there' and a subjective world 'in here' … the world is not constructed by the learner; nor is it imposed upon her; it is constituted as an internal relation between them" (1997, p. 13). From this perspective, experiencing a phenomenon involves varying levels of inter-relationships, between people and phenomena, so although a description of an experience must obviously encompass some sentient being interacting in some *way* with some *thing*, in phenomenography it is the *relationship* between these that constitutes the experience being described. Marton further

explains by saying “an experience is a relationship between object and subject, encompassing both” (2000, p. 105).

Although phenomenography is compatible with a constructivist paradigm (as described by Lupton, 2008, p. 55), it is an emphasis on inter-relationships that signifies the difference between relational and strictly constructivist approaches. Whereas proponents of both relational and constructivist approaches assume a relativist ontology (the existence of multiple realities), the constructivist approach leans towards the actual existence of multiple realities: that is, that “the very raw stuff of our world created by one cognitive agent is different from that of another agent” (Lee, 2012, p. 407) as opposed to the relational position that assumes the existence of only one reality that is experienced in multiple ways by different social agents. For this reason, as Marton explains, phenomenography does not attempt to answer questions about what such an experience is, because that “rests on a dualistic ontology: object and subject are separate” (2000, p. 104). Instead, the non-dualistic stance of a phenomenographic approach sees the “object and subject as not separate, the subject’s experience of the object is a relation between the two” (p. 104). In explanation, Marton and Booth state:

> our world is a real world, but it is a described world, a world experienced by humans. Quite obviously, humans did not cause the Big Bang, but the way in which it is conceptualized and described is a human way … the implication of this is not necessarily that our way of understanding of the Big Bang is flawed or distorted, but that it is partial. (1997, p. 113)

In comparison to a constructivist or social constructionist stance, that perceives reality as arising from individual or social acts of *construction*, the phenomenographic perspective takes a relational stance, perceiving reality as arising from experiences that *constitute* the world (Marton & Booth, 1997). According to Marton, reality arises from our experience of the world because “we do not find out about an independently constituted reality, we participate in an ever ongoing constitution of the world” and constitution of reality through experience is mediated by the contexts within which it occurs because the world is “far more than each one of us can experience individually” (1995, p. 173). Marton therefore sees “our collective experience [as] the totality of all the different ways in which we experience the world which is a sub-set of all possible ways of experiencing it” (p. 174). Uljens provides an equine example of that multiplicity of experience: “the ‘truth’ about, for example, a horse, is the sum of the observations of the horse-book writer, the jockey, the gambler, the farmer, the teenage girl,

the veterinary" (1996, p. 114, some commas added). This shows experience of any particular aspect of the world as existing within a spectrum of possible understandings, but that even the most complex understanding is actually only partial.

This relational ontology flows through into epistemological assumptions about the structure of knowledge, showing phenomenography to have aspects in common not only with Bourdieu's theories of relational thinking but also with Polanyi's theories of tacit knowing. Like tacit knowing, phenomenography assumes that knowledge is essentially multilayered (Uljens, 1996). From this perspective, knowing a phenomenon expertly involves the knower having simultaneous awareness of multiple dimensions of that phenomenon. The awareness of the novice is correspondingly less complex than the expert, in that the novice will be simultaneously aware of fewer dimensions. This could otherwise be explained as an expert having "deep" awareness of a phenomenon, as compared to the "surface" awareness of a novice. However, whether deep, surface, or somewhere in between, a knower's awareness is only partial because it is affected by both the context in which it is known and the intentionality of the knower. A phenomenographic researcher once explained the interconnection between context and intention with the comment, "a person's experience is strongly influenced by their intentions or purposes … and the context in which the phenomena are embedded, in turn, influence the experience" (interviewed by Trigwell, 2000, p. 64).

This emphasis on differences of awareness reflects the influence of Gestalt psychology on phenomenography, which is another similarity with Polanyi's tacit knowing theories. To Polanyi, the discernment of new knowledge (insight) emerges through the integration of parts already tacitly known, thus involving a "jump from particulars to a meaningful whole" (Gelwick, 1977, p. 61). To illustrate the ways that the whole is discerned from parts in a phenomenographic perspective, Marton and Booth use the example of a person encountering a wild deer whilst walking in the woods — which should perhaps be changed, for the Australian context, to an encounter with a wombat in the bush. To see the wombat, it must be discerned as a separate entity from the pattern of grass and bushes surrounding it, and we do this by assigning meaning to a variety of clues that enable recognition. In this respect, the structure of the entity (which we can see there in the grass and bushes) and the meaning of the entity (which we recognise as a wombat), are mutually experienced. This illustrates the way that our experience of encountering that wombat "has a structural aspect and referential (meaning) aspect" and that these are "dialectically intertwined and occur simultaneously when we experience something" (Marton & Booth, 1997, p. 87).

Marton and Booth then borrow the phenomenological terms of external and internal horizon, to describe two second-level distinctions of the structural aspect: "that which surrounds the phenomenon experienced, including its contours, we call its external horizon. The parts and their relationships, together with the contours of the phenomenon, we call its internal horizon" (1997, p. 87). In the case of the wombat encounter, the external horizon extends from the immediacy of that experience (i.e., the environment within which this wombat can now be seen) to all other experiences that enable recognition (e.g., seeing wombats in wildlife documentaries, in books, in other bush settings, etc.). The internal horizon comprises aspects of this particular experience (e.g., this particular wombat's size, movements, etc.). Marton and Booth argue for these internal and external horizons contributing to a "structure of awareness", which is again explained with phenomenological terminology as constituting a "distinction between the object of focal awareness, the *theme*, and those aspects of the experienced world that are related to the object and in which it is embedded, the *thematic field"* (1997, p. 98; original italics). In another publication, Booth describes the theme as forming "a gestalt, which is conjoined with the constituents of the thematic field through unity of context or unity of relevance" (1997, p. 141). Surrounding the theme and the thematic field are those aspects that, whilst impacting on an experience, are not necessarily related to it in terms of providing meaning (for example, a subsidiary awareness of the sound of birds singing in the bush). Again borrowing from phenomenology, this peripheral aspect is perceived as the "margin" of awareness. Whereas the theme or the focus of awareness belongs to the internal horizon of the experience, the thematic field that enables the awareness, and the margin that is peripheral to awareness, belong to the external horizon (Marton & Booth, 1997, p. 98).

Even if the context stays the same (i.e., experiencing the sight and sounds of a wombat in the bush), the situation within which the experience occurs is always susceptible to change, which will lead to corresponding changes in the structure of the experienced awareness. If, for example, attention is suddenly drawn to a kookaburra call amongst the peripheral bird sounds in the middle of the day, the incongruence of this may alert us to possible weather changes.[3] This shifts our focus from the wombat to the sky, where we can now see, far off in the distance, a storm approaching. The surroundings, previously peripheral, are now the focus. We

[3] Kookaburras call and mark their territories in the early mornings and late evenings. Hearing kookaburras calling during the middle of the day is commonly believed to be a prediction of weather change.

remember that the dirt road exiting this area is dangerous when wet, so we scan the bush to consider the fastest route back to the car, wanting to be away before the storm hits. This example shows awareness as being continually dynamic and influenced not only by the immediate context but also by contexts previously experienced. D'Armour points to the "entire fluid structure of internal and external horizon [being] relationally defined and redefined according to the subject's ongoing experience of the world" (2008, p. 128). Yet despite this fluidity, the actual frame of awareness—theme, thematic field, margin—remains as a constant, even though "we continuously 'decide' what will be conceived as figure and what will be 'put aside', seen as background" (Uljens, 1996, p. 113). This illustrates the way that the "structure" of awareness remains stable, even when the "content" of awareness consistently changes. Later, our recollection of this wombat encounter may stimulate reflection about aspects of the experience. We may, for instance, wonder if the oncoming storm was in some way the cause of the unusual midday wandering of the wombat[4] and might actively seek information to answer that question. To the phenomenographer, both the aspects of the actual remembered experience and the experience as augmented by later reflection and investigation are of equal importance when asking people to describe their experience of some phenomenon.

Outline of Phenomenographic Processes

Phenomenography, as an approach for investigating experience, is based on the premise that the "structures of awareness" within descriptions of peoples' experiences of some phenomenon allow the identification of a range of ways that that a particular phenomenon may be experienced. Phenomenographers usually gain access to descriptions of experiences through loosely structured interviews during which the interviewee's relationship with some phenomenon is discussed. The interviewees are generally connected through common activities (e.g. practitioner researchers in a university context) and also through shared experience of some phenomenon (e.g. information engagement), but each will experience that phenomenon somewhat differently. Through the process of interviewing a range of people interconnected in this way, it is possible to identify a range of qualitatively different ways of experiencing the same phenomenon. Sometimes these ways will represent layers of

[4] Wombats are usually crepuscular or nocturnal wanderers.

complexity that might relate to previously described interconnections between levels of novice and expert awareness.

The task of the phenomenographic researcher is to aim for an open and deep discussion with interviewees about their relationship with a phenomenon. The discussion is seen as *open* because, although some pre-designed questions are used, the interview structure is flexible enough to allow interviewers to follow "unexpected lines of reasoning" if these offer potential for "fruitful new reflections that could not have been anticipated by the researcher" (Orgill, 2007, p. 134). Describing the interview structure as *deep* reflects an aim to "follow a certain line of questioning until it is exhausted, until the participant has nothing else to say and until the researcher and participant have reached some kind of common understanding about the topics of discussion" (p. 135). Phenomenographic interviews are transcribed, usually verbatim, and are then analysed to ultimately map aspects that signify different ways of experiencing. In particular, the researcher will be looking for differences that represent *critical* variations, meaning that those considered non-critical will ultimately not be mapped. In this sense phenomenography provides a "stripped" description (Marton & Booth, 1997, p. 114). Akerlind sees focusing on critical aspects as allowing "structural relationships to be highlighted in a way that would not be possible if the analysis focused on every nuance of meaning" (2005a, p. 72); strong emphasis on the structure of experiences is a pivotal aspect of the approach and "increases the potential for practical applications from the research" (p. 71).

Identification of these critical variations occurs via an iterative process that involves first reading all—or a set—of the transcripts, then re-reading and making notes, then re-reading and sorting into categories (supported by particular utterances from the transcripts), then re-checking these categories, and so on. Cousin describes this initial process as being somewhat like a card game

> in which you are sorting out different piles according to clubs, diamonds, etc. but each time you look at the comments you have selected for various groups, you will be adjusting, reducing and shifting them around until you are satisfied that you have fairly represented the variation. (2009, p. 194)

This initial iterative process results in the tentative development of sets of "categories of description" that are again re-assessed against the transcript data, usually resulting in the initial categories being modified, deleted or added to. Orgill sees "this process of modification

and data review" as continuing "until the modified categories seem to be consistent with the interview data" (2008, online). Following this process, attention is given to interconnections between the categories, to identify the particular "outcome space" representing a spectrum of qualitatively different ways of experiencing this phenomenon (2008, online).

In summary, as noted by Giorgi, phenomenography originated from a "grassroots development that leapt from problem to solution and from question to answer" (1999, p. 70). These beginnings led to philosophic assumptions, and theoretical considerations, being only later made explicit. After more than three decades of phenomenographic studies, and of debate and discussion, the core ontological and epistemological assumptions of phenomenography are now clearly articulated and more widely understood. It is established that ontologically, phenomenographers do not seek to describe the nature of reality as such, but the nature of particular aspects of reality *as experienced by* particular groups of people. Phenomenography is a "stripped back" approach because only critical aspects of experience are retained in research outcomes, and these outcomes represent collective (not individual) experience. Through this focus on variation, phenomenographers often uncover aspects of world that might otherwise stay tacit:

> in science – as well as in daily life – statements are made about the world, about phenomena, about situations. These statements are made from, what we call, a first order perspective. The ways of experiencing the world, the phenomena, the situations, are usually taken for granted, tacit, transparent. We do not see them. We are usually not aware of them. In phenomenography, from the second order perspective, these underlying ways of experiencing the world, phenomena, situations are made the object of research. (Marton, 1995, p. 178)

Thus the ontological assumptions underlying phenomenography are described as non-dualistic (because reality is simultaneously objective and subjective), relational (because the approach is "concerned with the relations between human beings and the world around them": Marton, 1986, p. 31), and interpretive from a second-order perspective (because the phenomenographic researcher interprets the described life-world experience of study participants to identify critical variants). From an epistemological perspective, phenomenographers perceive knowledge as multidimensional, varying in complexity, and in every instance only partial. Like Bourdieu who saw the social world as "a multi-dimensional space that can be constructed empirically by discovering the main factors of differentiation

which account for the differences observed" (1987, p. 3), phenomenographers seek critical variations in ways of experiencing through the analysis of differing dimensions (or structures) of awareness. Discrimination and discernment within structures of awareness are epistemologically important for phenomenographers because "knowing and understanding is a matter of being capable to discern" (Runesson, 2006, p. 401).

The practical processes of data collection and analysis that are used within the phenomenographic approach are consistent with the relational perspective in that they focus on experience representing "a relationship between object and subject" (Marton, 2000, p. 105). Furthermore, the phenomenographic focus on the structure of the experience supports a view that "structure presupposes meaning and meaning presupposes structure. Structure and meaning mutually contribute to each other in the act of experiencing" (Pang, 2003, p. 149). A focus on structure accentuates the possibility for practical applications of phenomenographic outcomes (Akerlind, 2005a). In terms of this study, research outcomes will potentially enable novice practitioner researchers to increase the complexity of their awareness of a particular phenomenon (i.e., information engagement in a university context) by directing their attention to aspects of that phenomenon that might otherwise have remained invisible.

Differences Between Phenomenography, Phenomenology and Psychology

The fact that phenomenography, psychology and phenomenology share common interests and terminology can sometimes cause confusion, which can lead to unreasonable comparisons and criticisms of the approach. To avoid that confusion, this section explores how phenomenography differs from psychology and phenomenology.

Phenomenography and psychology.

Uljens has noted an "unsolved tension between the phenomenographic interest in consciousness on the one hand and the claims that phenomenography is not a psychology on the other" (1996, p. 128). However, an important difference between psychology and phenomenography is that psychology focuses on individuals' "inner psychic processes" (p. 128), which is often identified via some form of experimentation, whereas phenomenography focuses on collective descriptions of experience that are interpreted through the second-order perspective of the researcher. Unlike psychologists who are particularly interested in how the mind affects behaviour, phenomenographers have interest in relationships that people have

with aspects of their world. In this way, as noted by Marton, the phenomenographic approach is “more interested in the content of thinking than is traditional psychology” (1986, p. 32). As relationships require the coexistence of both consciousness *and* content, both are equally important to phenomenographic research. By comparison with the psychological emphasis on thinking processes, when “thinking” is considered in phenomenography, it is always “described in terms of what is perceived and thought about; the research is never separated from the object of perception or the content of thought” (p. 32). This means that phenomenographic outcomes are always perceived as context specific as opposed to the psychological research aim of identifying “overarching laws of thought or perception that can be applied no matter what the situation or subject matter” (p. 32).

Marton credits Max Wertheimer (1945), founder of Gestalt psychology, with providing “a very thorough qualitative analysis of different people’s structuring and understanding of the content of various problems” (1981, p. 189) that opened the way for developing new research approaches such as phenomenography. Yet, just as Polanyi’s “tacit knowing” theories are influenced by Gestalt psychology but are not actually manifestations of that tradition, so Marton and Booth’s (1997) “structure of awareness” has been influenced by Gestalt ideas of part-whole relationships, but would never be considered Gestalt psychology as such. As has been previously mentioned, it was turning away from the perceived rigidities within cognitivist approaches to learning (Entwistle, 1997) that motivated the emergence of phenomenography. Part of that motivation involved seeking an approach to understanding experience that was “entirely different from describing mental representations, short- or long-term memory, retrieval processes, and the rest of the conceptual apparatus of the cognitivists” (Marton and Booth, 1997, p. 113).

Although Marton (1981) acknowledges that Piagetian developmental psychology has had some influence on phenomenography, he later clarified this with the comment, “Piagetian constructivism has a clear psychological orientation [whereas] the constitutional framework—to which phenomenography clearly belongs—is more easily reconciliable [sic] with didactic considerations” (Marton & Neuman, 1989, p. 40). Unlike Descartes’s famous “cogito ergo sum”, Marton and Booth have declared a preference for the alternate statement, “cognosco ergo sum” (I experience, therefore I am)” (1997, p. 113).

In summary, despite surface similarities, phenomenography is unlike psychology in a number of significant ways. One of the most important differences concerns phenomenographers’

disinterest in “thinking in the cognitivist sense” (Uljens, 1996, p. 110). Although both phenomenographers and psychologists share an interest in consciousness, psychologists focus on consciousness itself, whereas phenomenographers focus on the *relationship between* consciousness and the content to which it is directed. Whilst psychology focuses on the identification of “psychic processes”, phenomenography instead aims to describe “manifestations of forms of thought or ways of functioning which reflect the subjects’ experienced world” (p. 128). Phenomenographers have more interest in the content of thought than psychologists because the “internal relationship between the experiencer and the experienced” (Marton, 1995, p. 176) means person and content are equally important. Finally, unlike psychologists, phenomenographers do not aim to develop “overarching laws” (Marton, 1986, p. 32).

Phenomenography and phenomenology.

Both phenomenography and phenomenology share “relational, experiential, contextual and qualitative” research orientations (Marton, 1986, p. 40), but these similarities mask important differences. Although the shared root *phænomenon,* which means “to make manifest” or “to bring to light” has led to confusingly similar names, phenomenography and phenomenology are quite different in a number of ways, the most obvious arising from the phenomenological aim to capture the “singular essence” of an individual’s experience (Marton & Booth, 1997, p. 117). Phenomenologists seek that aspect of experience through identifying and describing “similarities, or what is most common, among the interviewees’ experiences” (Froehlich, 2011, p. 57), and within that process differences are perceived as “merely accidental or contingent” and therefore disregarded (Spiegelberg, 1975, p. 64). Phenomenographers take an opposite stance by focusing specifically on differences and by ultimately disregarding similarities when seeking variations in experience.

Smith describes phenomenology as “the study of structures of consciousness as experienced from the first-person point of view” (2011, online). Barnard, McCosker & Gerber argue that this shows phenomenology seeking a “noumenal first-order perspective in which the world is described as it is”, which is quite different from the phenomenographic, second-order perspective that “is phenomenal or experiential and aims to describe the world as it is understood “(1999, p. 213). As an illustrative example, Martínková and Parry suggest that whilst phenomenographers are interested in the various ways that particular groups of people

might experience some phenomenon like “learning”, phenomenologists are differently interested in “what is it about human being that makes learning possible for us” (2011, p. 192).

Another difference between phenomenography and phenomenology relates to distinctions between pre-reflective experience and conceptual thought (Marton & Booth, 1997). Phenomenographers, intent on identifying collective structure and meaning, treat all types of experience in the same way, therefore seeing impromptu recollections or deeply considered opinions as equally useful, while the phenomenologist primarily seeks pre-reflective descriptions (Uljens, 1996, p. 107). Phenomenographers often use phenomenological terminology (words such as bracketing, etc.,) but the meaning of these terms is somewhat different, due to “stretching them to meet our own approach” (Marton & Booth, 1997, p. 87f).

In terms of research outcomes, phenomenographers aim for collective outcomes that are considerably more abstract than those produced by phenomenologists (Giorgi, 1999). Research outcomes are also presented differently. In the case of phenomenographers “categories of description” are generally presented as a “structured set” (Akerlind, 2005d, p. 323) that is known as the phenomenographic outcome space. This collective outcome space is not in any way similar to the phenomenological idea of usually singular, “structures of experience” (Martínková & Parry, 2011, p. 191). Unlike this generally consistent use of an outcome space by phenomenographers, phenomenologists present results in varied ways that depend on the exact type of phenomenology being used and on the aims of individual projects.

Despite having once been described as “a good-for-nothing brother of phenomenology” (Needleman, in Hasselgren & Beach, 1997, p. 191), phenomenography is in many ways very different from phenomenology. These differences are summarised in Figure 5

Phenomenography	Phenomenology
The structure and meaning of a phenomenon as experienced can be found in pre-reflective and conceptual thought	A division is claimed between pre-reflective experience and conceptual thought
The aim is to describe variation as it is understood from a perspective that views ways of experiencing as closed but not finite	The aim is to clarify experiential foundations in form of a singular essence
An emphasis on collective meaning	An emphasis on individual experience
A second order perspective in which experience remains at the descriptive level of participants' understanding, and research is presented in a distinctive and empirical manner	A noumenal first-order perspective that engages in the psychological reduction of experience
Analysis leads to the identification of conceptions and outcome space	Analysis leads to the identification of meaning units

Figure 5 Differences between phenomenography and phenomenology

Source: Reproduced from Barnard, McCosker and Gerber, 1999, p. 214.

Criticisms of Phenomenography

As expected in an "academic culture of disputation" (Entwistle, 1997, p. 134), the phenomenographic approach to academic research has received some criticism over time. When the approach first began to be used it was criticised for an "atheoretical stance" (Pang, 2003, p. 146) and after the theoretical stance was clarified, it was criticised for being "constructed post hoc from apparently cognate developments in the social sciences" (Richardson, 1999, p. 54). The phenomenographic approach has been criticised by adherents of both quantitative and qualitative paradigms, as described by Svensson:

> From one side the analytic characteristics of explicating results in the form of categories and relations was appreciated but the explorative and interpretative methods of arriving at the results were questioned. From the other side the explorative and interpretative character of data collection and analysis was accepted but the analytic character was questioned. (1994, p. 13)

Critics have negatively regarded the apparent theoretical flexibility of the phenomenographic approach, which occurs because phenomenography is, as Bruce describes, "not a set of techniques [but] a frame which may be interpreted in different ways, through the lenses of positivism, constructionism or critical theory within which different techniques may be

considered appropriate" (2006, p. 14). Although some perceive this flexibility as a weakness it has supported ongoing refinements and adjustments that have ultimately strengthened the approach. Lupton provides evidence of this evolution by pointing to a "continuum from positivist-objectivist approaches to interpretive-subjectivist approaches" (2008, p. 54) within past phenomenographic research literature.

Some (e.g. Giorgi, 1999) argue that phenomenography might be improved if it more closely reflected aspects of other qualitative research methods. Others (e.g. Richardson, 1999) criticise the phenomenographic claim that outcomes can accurately represent the experiences of others. Acceptance of respondents' descriptions at face value has been subjected to some criticism, (e.g., Bligh, 1993) and Saljo also describes inherent dangers associated with this:

> In many cases, it seems that it would be reasonable to assume that utterances signify something else, for instance, the attempt to fulfil one's communicative obligations when being asked a question or a wish not to lose face when confronted with an abstract and maybe difficult question. (1997, p. 178)

Richardson has also argued that phenomenographic studies are particularly susceptible to interviewees giving untrue descriptions of their experiences because, unlike ethnographers, phenomenographers "do not adopt a sceptical attitude towards the statements that are made by their interviewees" (1999, p. 59). The effect of a so-called sceptical attitude on the power balance between interviewer and interviewee is not, however, mentioned. That criticism also fails to recognise that phenomenographers converse "until the researcher and participant have reached some kind of common understanding about the topics of discussion" (Orgill, 2008, online), which may involve clarifying inconsistencies in views expressed at different points of the interview (Bowden, 2000). Orgill agrees that people's descriptions of their experience might not be exactly equivalent to their actual ways of experiencing something, but argues, "the only way we can begin to understand the ways in which people experience a given phenomenon is to ask each person to describe his or her experience". She contends that although phenomenographic results can never possibly describe all the ways that something might be experienced and are therefore only partial, they can still be useful; so "it may not matter if accounts are equivalent to experience" (2008, online).

As phenomenography began to be increasingly used in a range of different contexts, criticisms arose (e.g., Ashworth & Lucas, 2000; Bowden, 2000; 2005; Harris, 2011; Saljo, 1997; Svensson,

1997) about inconsistencies in the ways that phenomenographic processes were being used. As an example, Bowden (2005) suggests that inconsistent interviewing processes can potentially create misunderstandings that could bias results. Using the terminology of other disciplines has been another source of criticism (e.g. for contrasts with phenomenological terminology, see Martínková & Parry, 2011, p. 192). In particular, phenomenographers have been criticised for using the word "conceptions" to describe variations in experience. For example, Svensson suggests that people unfamiliar with phenomenography may confuse "conception" with "concept" or "conceptualisation" (1989, p. 531). Researchers actually using the approach can also become confused as evidenced by Bruce's comment that

> Too many papers I read continue to describe people as *holding* or *having* conceptions, as though conceptions are characteristics of persons, when … important phenomenographic positions are that (a) conceptions are not characteristics of people and (b) different contexts bring about use of different ways of seeing. (2006, p. 16; original italics)

Bowden has also commented on "wide variation in the use of the term 'conception' amongst phenomenographers" (2005, p. 15), preferring the meaning given by Jorgen Sandberg: "people's ways of experiencing a specific aspect of reality" (1987, p. 203). Sandberg elaborates by describing conceptions as "typically presented in the form of categories of description" so as to "identify and describe individuals' conceptions of some aspect of reality as faithfully as possible" (p. 204). An awareness of confusion about phenomenographic conceptions has led Marton to declare a preference for using the phrase "ways of experiencing" (1995, p. 172). This study has followed that preference by also using the phrase "ways of experiencing" instead of "conceptions".

Phenomenographic use of the term "bracketing" has also been criticised. Although Marton (cited in Ashworth & Lucas, 2000) stresses the need for phenomenographers to "bracket" their own experience when striving to see a phenomenon as it appears to participants, Lupton (2008) notes ambiguity about how this actually occurs. This ambiguity can lead to criticism arising from differing understandings, as for example between phenomenographers and phenomenologists (Martínková & Parry, 2011). In a phenomenographic sense the term "bracketing" reflects a researcher's aim to, as much as possible, suspend personal ideas and opinions during interviews and data analysis. Problems can occur if a researcher is unable to put aside personal content knowledge, risking data that is inconsistent with the "expert view" being ignored or disregarded (Walsh, 2000). However, the idea of bracketing is also itself

problematic, because removing a researcher's perspective completely would also remove the possibility of perceptual analysis (Fischer, 2009). Uljens argues that all research is guided to some degree by "prior theory … and the knowledge interest of a specific study" (1996, p. 122), and although this does not necessarily determine results, "a researcher must always be acquainted with knowledge (theory) in the field that he or she is investigating in order to do a good interpretative job" (p. 122). However, even if bracketing is somewhat problematic—and not entirely possible—in empirical research, researchers should still strive for reflexivity, which requires ongoing reflection on the role of the researcher. Fischer says that

> ongoing reflection on our own engagement with our collection and analysis of data often is referred to as reflexive, stressing one's looking back and inward in a self-aware manner. The goals are to check whether one is imposing meanings on the data and to re-look to see what other meanings might appear. The researcher repeatedly discovers what his or her assumptions and interpretive understandings were and reexamines them against emerging insights. Findings "regestalt", are again disrupted, and again "regestalt". (2009, p. 584)

Although Fischer was not discussing phenomenography as such, her statement is applicable to that approach. By clarifying the meaning of utterances during interviews and by using reiterative processes during analysis, phenomenographers similarly aim to consider the same data from various perspectives.

A reflexive approach also deflects other criticisms (e.g. Webb, 1997) about the presumed neutrality of phenomenographic researchers. Although complete neutrality is also impossible, researchers can continually examine their own impact on any study undertaken. Orgill argues that the benefit of such self-examination is that it "may lead to additional insights into the data and, to some extent, a more critical examination of how the researchers own beliefs have affected the research and the results of this research" (2008, online). For example, in her phenomenographic study into relationships between information literacy and learning, Lupton (2008, pp. 58-60) explicitly explores, and articulates, her own relationships with the phenomena (information literacy and learning), with her interviewees (students), and with the subsequent research data. Following Eisner (1998) she perceives the role of the researcher as encompassing the "self as instrument" and argues for her subjectivity constituting a "unique signature" providing individual insight into particular situations. Furthermore, she believes researchers choosing a phenomenographic approach do so because of a "desire to see the

world through another's eyes" (Lupton, 2008, p. 58), which includes being conscious of needing to avoid imposing the researcher's worldview. This study will follow Lupton's example by similarly clarifying relationships between the researcher (myself), the phenomenon (information engagement), the interviewees (art and design practitioner researchers), and the subsequent data.

The ways that phenomenographic outcomes develop from individual descriptions of experience into collective classifications has also been subject to some criticism. For example, Cousin (2009, online) warns that classification is in itself an inherently conservative process. Some commentators (e.g. Saljo, 1994) have also argued that classification processes de-contextualise interview data. In part, Saljo's criticism relates to one of two different modes of analysis. In the first mode, critically significant chunks of text are removed from the transcripts and combined into one (de-contextualised) document, referred to as a "pool of meaning", from which analysis then proceeds. Critics of this "cut and paste construction" (Bowden, 2000, p. 12) see such separation as restricting consideration of the context that is provided by complete transcripts and increasing potential for misinterpretation. Bowden argues "such de-contextualisation makes the task more difficult and is a methodological variant which is at odds with the underlying relational nature of phenomenography" (p. 12) and he endorses an alternative approach that involves staying with complete transcripts and considering each statement in context, until meaning is clearly established. Although classification into categories of description eventually separates individuals from transcripts, key quotes are retained to represent individual voices in the final collective structure. Whilst probably not satisfying critics such as Saljo, who may still see this as potentially alienating individuals "from their own utterances by reducing these into statements" (1994, p. 75), it does allow the researcher to be more aware of the contextual rhythms of original interviews as structure is considered.

Considerable discussion has also ensued over whether phenomenographers "construct" or "discover" the categories of description. Within this, Walsh questions whether "categories [are] already present in, and constitutive of the data, so the purpose of the phenomenographic analysis is to allow the categories to emerge progressively as the analysis proceeds? Or, are they a construction which the researcher imposes?" (2000, p. 20). Bruce resolves this dilemma by "viewing the analysis process as *both* process of construction and a process of discovery" (1997, p. 103; original italics). She explains "it is a process of discovery because the conceptions reveal themselves through the data and it is a process of construction because the

researcher must identify and describe these conceptions in terms of referential and structural elements" (p. 103). Balance is achieved through continual reiteration in ways like the "regestalt" process previously described by Fischer (2009). In keeping with Bruce's (1997) argument, this particular study also sees data analysis as necessitating both construction and discovery of meaning.

Quality concerns about the reliability, validity and generalisability of qualitative research often come from non-qualitative researchers seeking to "disqualify qualitative research" (Kvale, 1995, p. 20). Some believe that qualitative researchers should ignore such criticisms, as does Morrow, who believes that "as long as qualitative researchers are apologetic for our unique frames of reference and standards of goodness, we perpetuate an attitude on the part of postpositivist researchers that we are not quite rigorous enough" (2005, p. 250). Others, such as Lincoln and Guba (1985), propose a middle path by suggesting parallels that might be made between positivist quality criteria and those more applicable for qualitative research. Although Lincoln and Guba's seminal text actually compares qualitative and positivist criteria, the fact that qualitative data can sometimes be quantitatively analysed (and may therefore be defined as positivist), suggests that a more appropriate comparison is between non-positivist and positivist, as outlined in Table 10.

Table 10 Parallels between non-positivist and positivist quality criteria

Non-positivist quality criteria	Positivist quality criteria
Credibility	Internal validity
Transferability	External validity/generalisability
Dependability	Reliability
Confirmability	Objectivity

Source: Adapted from Lincoln and Guba, 1985

Although the usefulness of Lincoln and Guba's suggestions will largely depend on the type of qualitative research being undertaken, and although their criteria has been described as "fairly prescriptive" (Green, 2005, p. 44), they still provide a useful template that can be adjusted for research practice differences.

Shenton argues that credibility assurance in non-positivist qualitative research involves demonstrating "that a true picture of the phenomenon under scrutiny is being presented" (2004, p. 63). In terms of phenomenographic research, Collier-Reed, Ingerman and Berglund

have adapted criteria originally proposed by Booth (1992) which they describe as “content-related credibility” (requiring the researcher to have a sufficient knowledge of the phenomenon under investigation), “methodological credibility” (relating to the fit between research aim and study design/implementation), and “communicative credibility” (requiring the researcher to provide evidence to support interpretations) (Collier-Reed, et al., 2009, p. 343). For example, in this study, content credibility is evidenced by the preceding contextual chapters and by my own experience working with art and design practitioner researchers. Methodological credibility is also evidenced by the explanation as to why phenomenography has been chosen for this study.

Green has argued that communicative credibility in phenomenographic research involves “strict adherence to the data within the interview transcripts” and clearly linking this to interpretations made (2005, p. 44). Triangulation and member checking, as used in naturalistic research, are not considered appropriate for phenomenography (Green, 2005), primarily because phenomenographic data tends to come from the single data source of interviews. Member checking might occur during interviews, as researcher and participant seek common understanding (Orgill, 2007) and also during transcription, when checking with interviewees if words are difficult to decipher. However, member checking is less possible at the analysis stage, especially as it moves from individual statements to collective meanings (in the categories of description). As Bowden describes, categories are “derived from a range of transcripts, not just their own”, therefore asking any one individual to validate collective meanings is obviously problematic (2005, p. 30).

Phenomenographic research undertaken by teams of researchers may attempt to ensure communicative credibility through an inter-judge process whereby individuals within the team separately analyse the same data before using a “devil’s advocate” process (Bowden, 2005, p. 16) to discuss those interpretations with each other. Sandberg argues however that “inter-judge” processes create “theoretical and methodological” inconsistencies (1997, p. 207) that pertain to phenomenographic assumptions about researcher subjectivity. He suggests that since “the researcher cannot escape from being intentionally related to the research object, [then] the categories of description are always the researcher's interpretation of the data” (p. 208). According to Sandberg a more useful way of ensuring reliability—or in this case, communicative credibility—involves harnessing the researcher’s “interpretive awareness”, thereby bringing subjectivity out in the open and considering how it enhances or detracts, rather than trying to overcome it (p. 209). This type of interpretive awareness is demonstrated

by Lupton's (2008) exploration of her own relationship with the phenomenon under investigation, the interviewees and the resulting data. In this way subjectivity is "not seen as a failing needing to be eliminated, but as an essential element of understanding" (Stake, 1995, p. 45).

Transferability in phenomenographic research relates to the applicability of the outcomes to other similar contexts, and it was this facet of the approach that attracted my interest when I first encountered it. For example, Bruce's (1997) phenomenographic research outcomes were useful when communicating the benefits of information literacy to academics at my campus. Even when phenomenographic research outcomes do not pertain to similar subject matter, Collier-Reed et al. argue that transferability can be achieved by providing enough information about research processes to allow others to "analyse the essential aspects of the origin, context and structure of a research situation, so that it is possible for similarities and differences to be seen in relation to other situations where the results are potentially of relevance" (2009, p. 352).

Whilst transferability relates to the application of research, dependability relates to whether another researcher, undertaking a similar study, might achieve the same results. From one perspective this is impossible, because changes in the situation of a study over time, and in the relationships of other researchers means results can never be exactly the same. Dependability can, however, still be addressed in phenomenographic research by reporting research processes in detail to enable some future researcher to repeat the process, even if differences in outcomes are likely (Shenton, 2004). Collier-Reed, et al. argue for dependability within a phenomenographic research study being a "function of the interview conversation" whereby the researcher ensures that the interviewees "are expressing how they experienced the phenomenon in question" (2009, p. 349) and are not led to see it in a particular way. Dependability is also a "function of the accuracy of the transcription … ensuring that the 'spoken word' is transcribed as accurately as possible" (p. 350). Finally, Collier-Reed et al. see dependability being "a function of analysis" whereby dependability checking is undertaken during the analysis process. Akerlind, Bowden and Green advise the sole researcher, seeking to undertake this type of checking, to find "ways of acting as your own devil's advocate" (2005, p. 89).

Confirmability is addressed to some extent in the phenomenographic interview process where the meaning of interviewees' statements is "elicited and clarified … to facilitate interpretation"

(Sin, 2010, p. 315). Confirmability is also strengthened through an awareness of weaknesses associated with the research approach and by explaining attempts to avoid these. Each of these quality criteria (credibility, transferability, dependability, confirmability) has been considered within this particular study in ways outlined in Table 11.

Table 11 Quality criteria in phenomenographic research

Qualitative quality criterion	Provision made by researcher
Content-related credibility	Articulate researcher's own understanding of phenomenon under investigation
Methodological credibility	Demonstrate applicability of chosen research approach Articulate how research design and implementation (e.g. sampling, etc.) correspond with research aim
Communicative credibility	Articulate evidential support for interpretive conclusions
Transferability	Establish the particular context of study to inform judgments (by other practitioners) as to usefulness for related contexts
Dependability	Provide a detailed description of phenomenographic processes as enacted (interview, transcription and analysis)
Confirmability	Articulate weaknesses of approach and outline attempts to avoid these Articulate potential researcher bias and steps taken to account to avoid

In summary, this section has outlined criticisms of the phenomenographic research approach and responses made to these. Criticisms contribute to the productive evolution of research approaches, and recognition of this leads to healthy debate and dialogue amongst phenomenographic researchers. For example, criticisms about subjectivity are answered by embracing "interpretive awareness" (Sandberg, 1997), demonstrated by exploring and articulating relationships between the researcher, the phenomenon under investigation, the interviewees and the resulting data (Lupton, 2008). Critics of phenomenographers' acceptance of interviewee descriptions at face value (Bligh, 1993; Richardson, 1999,; Saljo, 1997) can be countered with interview techniques that enable inconsistencies to be explored (Bowden, 2005) and facilitate researcher and participant co-understanding (Orgill, 2007). Confusion

generated by uniquely phenomenographic interpretations of borrowed terms such as "conceptions" and "bracketing" can be reduced by carefully clarifying these borrowed terms or by simply avoiding their use.

Arguments as to whether categories of description are *constructed* or *discovered* are resolved by accepting the existence of both (Bruce, 1997). Criticisms about the decontextualisation of participant voices can be countered by avoiding the compilation of "pools of meaning" and working instead with the complete transcriptions, retaining illustrative quotes as links to individual voices. Finally, criticisms relating to quality assurance can be met through adopting alternative quality frameworks such as that suggested by Lincoln and Guba (1985) and summarised in Table 11.

Study Design

I earlier outlined the practical considerations leading to the commencement of this study. Although it is important for a research question to precede the choice of research method, in my case, learning about phenomenography allowed me to recognise questions I was still clarifying and to also recognise a potential way of finding the answers I needed. If considered from the perspective of tacit knowing, it might be argued that by recognising potential in the phenomenographic approach, my mind was integrating particulars that I already tacitly knew, thereby providing insight about the most appropriate investigative path.

The phenomenographic research approach is not hypothesis driven (Cousin, 2009) but, as described by Marton and Pong, aims to "investigate the qualitatively different ways in which people understand a particular phenomenon or an aspect of the world around them" (2005, p. 335). Formulating a research question from a phenomenographic perspective is therefore relatively unproblematic (Cousin, 2009) in that the researcher first identifies the phenomenon of interest—in this case, information engagement—then the specific population of interest –in this case, art and design practitioner researchers working in universities—which allows the research question to be constructed around these two elements. This means that the research question becomes: "How is information engagement experienced by art and design practitioner researchers who are informing research in a university environment?"

I chose phenomenography as the investigative tool for this study for reasons that are "pragmatic and utilitarian" (Lyle & Robinson, 2002, p. 1189) because it appeared to be the best

way of being able to access and "understand the various ways that a group of individuals experience … specific phenomena in a specific context" (p. 1189). I believe that a wider understanding of the range of different ways that university art and design practitioner researchers experience information engagement will be able to be practically applied by librarians seeking different methods of assisting novice researchers in these fields. As earlier discussed, this study hopes to fill gaps left by previous studies into the information behaviour of artists and designers.

Discursive phenomenography.

As also previously mentioned, the particular "version" of phenomenography used for this study most closely resembles Marton's "pure phenomenography" (1986, p. 38), also described by Hasselgren and Beach as "discursive phenomenography" (1997, p. 197). Discursive phenomenography, as modelled by Hasselgren and Beach, consists of five stages: conversation, transcription, compilation, analysis and conception (Figure 6).

Figure 6 Model of the stages of discursive phenomenography

Source: Hasselgren and Beach, 1997, p. 197.

Because models tend to be approximations of reality, not all discursive research projects will be enacted as tidily as this one suggests. In the case of this study, use of the term "conversation" is tempered by an appreciation of the purposeful structuring of interviews, imposed by researchers seeking to maintain a particular focus. Emphasising this, Kvale suggests that research interviews described as conversational dialogue sometimes create "an illusion of mutual interests in a conversation, which in actuality takes place for the purpose of just the one part — the interviewer" (2006, p. 483). It should also be noted that although most phenomenographic analysis occurs after interview transcription, some analysis inevitably also occurs *during* interviews, as a consequence of the interviewer striving to ensure the interviewee's perspective is revealed (Bruce, personal communication, November 7, 2014).

Pilot study.

As recommended in the phenomenographic literature (e.g. Bowden, 2005), this study was preceded by pilot interviews to test planned questions, to practise interview techniques, and to gain experience with recording and transcribing. The pilot interviews (UNSW Ethics Committee Reference 06 2 119) were undertaken with the assistance of three art/design practitioner researchers (a painter, a photographer and a textile artist) working in a university context. The phrase "information engagement" was purposely excluded from the pre-prepared questions because varying understandings of that phrase and researcher attempts to clarify it might have influenced the participants to describe experiences in those terms. By instead talking about pre-research processes used when creating a particular work (or series), it was hoped that this would be avoided. In actuality, although interviews began with a question about "pre-research processes", the answers given tended to expand the discussion to include not only pre-research processes, but also processes during, and after, research. By focussing on the processes (which inevitably also uncovered the content) as opposed to explicitly asking about "what informs the work", it was hoped that participants would be encouraged to think beyond the norm of artist/designer statements about subject content or themes and to also consider activities that might have informed.

In the pilot, interviewees were asked five questions (A, B, C, D, and E); this was reduced to four questions plus prompts in the main study. Following the phenomenographic literature (e.g. Entwistle, 1997) which advised beginning with questions about concrete practices before moving to abstract thoughts, question (A) asked the practitioner researchers about the pre-research processes used to inform their last major work. As this question successfully prompted responses that were descriptive of ways that previous work was informed, it remained unaltered in the main study.

Question (B) asked about the structure of their information engagement processes. In the pilot this question required too much explanation, so in the main study it was broken into two parts, one asking about durations of information engagement—when it started and stopped during the research process, if in fact it did stop—and the other about patterns in that process. It should be noted that in the phenomenographic interview the content of the answer—actual practice—is less important than the meaning—why a practice is enacted this way (Akerlind, et al., 2005).

The third pilot study question, (C), asked participants about their career over time, in particular about any changes in the ways that they engaged with information. This question was also too long, so was shortened for the main study. In addition, “your career” was clarified as “your research career” (because the interviewees had many different, but not necessarily relevant, past careers/jobs to consider). The fourth question, (D), asked participants’ opinions on which information engagement skills were most important for art/design research students to learn. This was intended to allow participants to recall personal experiences that were important for learning. It was phrased in terms of other people’s learning in the recognition that it is not always possible to recall your own important learning but it may be possible to recognise it in others, which might then be related back to our own learning. As some participants were reluctant to speculate about the learning of others, in the main study when this occurred, the participant was asked about the ways that he/she had personally learned to inform research, thus approaching the same intent from another direction. The last question, (E), asked about similarities or differences between the types of research skills required in an academic environment and those needed for working elsewhere. In the pilot, this question was found to be already partly answered in responses to Question D, so in the main study it was used as a prompt for Question D. Because pilot participants made reference to information gained from teaching, in the main study another prompt for Question D asked about relationships between teaching (if they taught) and research. Comparative lists of questions in both the pilot and the main studies are provided in Table 12.

Table 12 Interview questions – pilot and main study comparisons

Pilot study - interview questions	Main study - Interview questions
A - "If you think back to the preparation for particular work/s you have created, can you talk about the pre-research processes that you used when creating these works?"	A - "If you think back to the preparation for particular work/s you have created, can you talk about the pre-research processes that you used when creating these works?"
B - "Does the process of identifying an information need, seeking out and utilising information follow a regular pattern for you? For example, is the process a continuum? Or are there identifiable points of stopping and starting the process?"	B (1) - "How would you describe the ways you look for and use information, for example is it an ongoing continuum, intermingled with other aspects of your research processes, or do you have identifiable points of starting and stopping?"
	B (2) - "How do you structure information use into your research processes – e.g. do you see it as a pattern – or are the processes more random?"
C - "If you think back on your career thus far, has the process of identifying an information need, seeking it out and utilising found information changed over time? If so, can you elaborate on those changes?"	C - "If you think back on your research career thus far, how has your use of information changed over time?"
D - "What research skills do you think art/design students should be developing to enable them to become artist/designer researchers?"	D – (alternative question) "How did you learn the information skills you now have?"
E - "Do you think the research skills required to practice research within a university environment are the same as those used in creative practices outside of the university environment?"	This question was removed and used instead as a "planned prompt" for question D
Prompts	Where interviewee has teaching role, another "planned prompt" (for question D) asked about relationships between this and information engagement for research purposes
Prompts	"Can you tell me more about X?"

The need for planned prompts has been suggested (e.g. Francis, 1993) as important for maintaining interview consistency. Within a phenomenographic interview, an interviewer seeks information about participants' relationships with particular phenomena but aims for a

non-leading role, as described by Akerlind, “following only those ideas raised by the interviewees, and developing a repertoire of follow up prompts that invite the interviewee to expand on what they have said without leading them to expand in any particular direction” (2005b, p. 108). In addition to those prompts already mentioned, others used in the main study included asking for more information about certain aspects of the interviewee’s response (e.g. “can you tell me more about X?”). This was also used when certain aspects needed more elaboration, but I (interviewer) needed to wait until the interviewee had finished speaking, to avoid interrupting the conversation flow. In those instances, I made notes as the participant spoke, seeking elaboration at the next pause. I also routinely clarified understanding with questions such as “When you say X do you mean Xx or XX?”, or by asking if I had correctly understood by repeating what was said in a slightly different way. Sometimes this led to participants re-clarifying previous answers.

Population and sample.

Phenomenographic studies traditionally interview small, purposefully selected samples, the average consisting of around 20-30 people (Akerlind, Bowden, & Green, 2005) however, depending on the numbers required to allow appropriate levels of variation, studies may deviate from this average. In the case of this study, the target group (population) consisted of art or design practitioner researchers working in a university context, either academic or research student, or both, and the key indicators were (a) practitioner researchers working in different mediums, (b) different levels of research expertise, and (c) men and women. The snowball sample selection technique was chosen for participant recruitment. This involves identifying one or more participants who meet the criteria and contacting them personally by phone or email to ask for their participation. If interviews are undertaken, participants are afterwards asked if they can suggest other suitable participants, and these are in turn contacted. Using this technique for the main study I was able to interview 28 art/design practitioner researchers, working in and across a range of mediums (ceramics, conceptual art, digital media, drawing, interior design, painting, performance art, photography, printmaking, sculpture and textiles), within five Australian universities (Australian National University, Curtin University, Sydney University, University of NSW and University of Western Sydney). This total included re-interviewing one of the pilot study participants.

Interviews.

Phenomenographic interviews are usually semi-structured and conversational in tone. Lupton (2008) has pointed to different ways that phenomenographic interviews are conducted, which she ascribes to researchers being influenced by either positivist-objectivist or interpretivist-subjectivist stances. Those influenced by a positivist-objectivist stance are more likely to control the interview process strictly, whereas those influenced by a interpretivist-subjectivist stance might seek more interviewee input into the process. This study chose an interpretivist-subjectivist perspective that aimed for interviews as natural and conversational as possible. Although the overall interview structure maintained the intended theme, the exact content and order of questions was directed by the flow of each interview. The main focus throughout was on interviewees' own experiences of the phenomena and within that, on the meanings being conveyed.

As described in the introduction to this thesis, the interview protocol for this study was informed by UNSW Ethics Committee requirements and approval was sought and gained for the main study (UNSW Ethics Committee Reference 08 2 109) that gave permission for a period of 12 months and (UNSW Ethics Committee Reference 08 2 109 EXT) as an extra 12 months extension.

Although ultimately effective, the snowball participant recruitment technique was in practice a stop/start process. I either had several interviews at once—working long hours to fit them all in—or long gaps of time without interviews—during which I worried that I wouldn't get enough. Contacting people, explaining the study, arranging times to meet, sending pre-interview information, undertaking the interviews, were all very time consuming. Initially I tried to undertake the interviews whilst balancing a fulltime managerial job, but I quickly found that I lacked the flexibility needed to meet interviewees at times convenient for them. To achieve that flexibility, I took leave from paid employment to complete the interviews. Although not totally successful—I completed the last six interviews after returning to work—giving up fulltime employment enabled me to complete all of the interviews and most of the transcribing in around 18 months.

In most cases each practitioner was interviewed once, for a period of 45 minutes to an hour. Interview venues varied considerably because I met participants in whatever place was convenient for them. I experienced some disasters, such as the recorder stopping mid-

interview twice, which meant that I lost part of one interstate interview, although we re-discussed via email what had been said in the "lost section". The second researcher, who was closer to home, I was able to re-interview at a later date. An advantage that came from transcribing earlier interviews whilst still undertaking later ones was that I learned to avoid mistakes such as interviewing in echoing spaces, like galleries, that distorted the recording sounds or in noisy places, like cafes, that drowned out the words of interviewees. Those examples highlight the disjointed messiness of the interview process that might otherwise be described simply as "interviewing 28 art/design practitioner researchers".

Interview transcription.

The transcription process, sometimes considered an administrative "chore" (Agar, 1996, p. 153), is often subcontracted to others. This is not ideal, primarily because the transcription process is itself usually interpretive (Bird, 2005). Lapadat and Lindsay, for example, note that it is possible for people transcribing to "make choices about transcription that enact the theories that they hold", potentially creating another layer between the spoken words and intended meanings (1999, p. 66). A benefit of phenomenographic studies is that most involve relatively small research samples, increasing the possibility of solo researchers being able to personally undertake both interviewing and transcribing processes.

In this study, interviews were transcribed completely. This included retaining all "place-keeping" or "thinking" words such as "um", "well" etc., and pauses in the responses (indicated by an ellipsis … in the transcriptions). Any emphases, or laughter, or remembered non-verbal actions that underscored meaning, were also included, within square brackets to separate them from words spoken. Remembering these extra details was helped by the fact that most transcriptions were commenced relatively soon after completion of the interview. If a particular artefact was shown during the interview, a description was noted separately. Sometimes I was given documents (e.g. exhibition invitations or catalogues) to take away, and these I could refer to later if necessary. The general approach that I took during the transcription process was to err on the side of keeping words, rather than cutting them out. I did this with a view to retaining anything that might allow me to better ascertain the meaning of each interviewee's described experience at the later time of analysis. Although understanding that a "perfect transcription" is ultimately illusory, I was aiming at least for transcriptions that were "adequate for the task at hand" (Silverman, 2006, p. 288).

As the interviews had been digitally recorded, I was able to save the files to my computer. Although I planned to use data management software (QSR NVivo) eventually, I chose to transcribe separately into MS Word, rather than directly into that software. This was mainly because I wanted to use my Mac laptop (which Nvivo was not compatible with), and because I was more familiar with MS Word than with NVivo. In order to later upload the transcriptions into NVivo (on a Windows computer), I found I needed to format the transcriptions in the following way (column titles not included):

Time span	Speaker	Content
02:00	MB	Spoken words
02:45	XY	Spoken words

Issues arising during transcription related to the already mentioned difficulties with hearing words and also ergonomic issues associated with posture whilst working. Being engrossed in the transcription process and unconsciously hunched over my laptop, I began to strain back and neck, which led to pain and loss of productivity and, ultimately, to a complete ergonomic restructure of my working space. Through trial and error I was eventually able to find a position that allowed me to work without straining muscles and eyes. I also learned the inefficiency of pushing on through tiredness, when correcting mistakes ate up more time overall.

Words that were difficult to decipher were notated in red with [can't decipher], but I often found, when later checking the accuracy of the whole transcription, I was able to decipher those words relatively easily. With the benefit of the more holistic understanding—as opposed to concentrating on each word—those words would suddenly be obviously clear within the flow of the sentences. As already mentioned, any words ultimately undecipherable were checked with interviewees.

Data analysis overview.

Unlike transcribing, which can occur as each interview is completed, phenomenographic data analysis does not begin until all transcriptions are completed, so as to allow analysis of the data as a set. Often some time elapses between the end of transcription and the start of analysis, mainly because the phenomenographic analysis process is intense, time consuming

and requires a somewhat singular focus. For this study I undertook the analysis over a period of around seven months, during which I worked on the data for three days—around 24 hours—per week. I found these gaps to be useful because it made the process seem less overwhelming. I was also able to think about the process in abstract whilst not actually working with the data and returned to the analysis each time with refreshed eyes and mind, which sometimes led to new realisations.

Following the method suggested by Akerlind (2005c) the analysis process began by dividing transcriptions into two subsets, commencing with the larger set (of 17), before later integrating the smaller set (of 11). This division allowed for more efficient management of the complete task. Efficient management of the data was also the primary reason for using a digital data management program (NVivo), and a secondary reason was to avoid the environmental waste from printing interview transcripts onto paper.

After uploading the first set (recordings and transcripts) into NVivo, I reread each transcript completely to gain familiarity with each one as a whole. On completion of that task, I then re-read each transcript again, this time using the NVivo annotation feature to create notes within sections of the transcripts, just noting those instances where participants were describing some type of information engagement. Once I had completed this process on all 17 transcripts I reread them all completely again, this time particularly focusing on the annotations. To assist my thoughts about the annotations, I also copied each one into a separate Word document and added a summary note about the significance of the utterance that had prompted it. Following Bruce's (1997) described path, I asked myself questions such as "how is this practitioner describing information engagement within his/her practitioner research?" and/or "what explanatory concepts are being used?"

Once I had re-read the transcripts and completed summaries for each annotation, I again went through the first set of complete transcriptions and began to name the various described ways of experiencing. I created coding nodes in NVivo by those names, before coding all similar instances into them. At this early stage I only identified what I saw as critical aspects of meaning and coded the utterance providing evidence of this meaning, sometimes also creating sub-nodes for utterances that appeared to be nuances of the same meaning. Creation of the coding nodes enabled me to group the utterances from different people together, whilst still maintaining a direct (hypertext) connection with the originating transcript. As noted by Lupton (2008) depending on whether aspects are in the foreground—or background—of awareness

during an interview, it is possible to express one, two, or several ways of experiencing, so this first iteration of coding culminated in over 30 nodes. On completion of this process, I went over the whole set again, and through reassessment of each node I saw that some of the nodes that I had previously seen as "unique" were not actually critically different and could be combined with other, already existing, nodes. This reduced the overall number of nodes, bringing it closer to an eventual list of "categories of description".

As mentioned previously, to explore ways of experiencing, phenomenographic analysis focuses on an "anatomy of awareness" (Marton & Booth, 1997, pp. 108-9), that encompasses both the referential meanings and the structure of experiences, each constitutive of the other. The early stage of phenomenographic analysis focuses mainly on referential meaning. This not only allows an overall familiarity with the transcripts but also provides the best chance for structure to emerge from the data, rather than making the data fit into a structure that is preconceived. Ashworth and Lucas have advised that focusing too soon on structure risks potentially changing "the way that the researcher views the data" and risks missing important points (2000, p. 298). However, because the referential meaning and the structure of experience are "dialectically entwined" (Akerlind, 2005a, p. 70) and therefore equally important, it is also necessary to address the structural analysis soon enough to allow both meaning and structure to be "adequately *co*-constituted in the final outcome space" (p. 71; original italics). A method suggested by Akerlind involves seeking common threads within the described experiences of all participants, which she describes as "themes of expanding awareness" (2005c, p. 172). Using this suggestion, it was possible to identify two clear themes of experience that were either "content" engagement or "process" engagement. Although sometimes almost indistinguishably intertwined, these two themes were clearly evident in every transcript.

At that point I had draft sets of nodes representing my interpretation of referential meanings and themes. Now I began again, re-reading all the original subset of transcripts, and creating new summary notes for each. In creating this second set of summary notes, I was looking for anything that I might have missed, and I also played devil's advocate with those aspects that I had already singled out, asking questions such as "what evidence is there for this interpretation of meaning?" or "if this respondent sees X and also Y, does this change the meaning for him/her?" or "what *else* might that mean?" or "is this the *critical* aspect exemplifying this respondent's way of experiencing?" To further clarify critical differences between individuals, I used Bruce's practice of looking for evidence in the data that would allow me to complete the statement, "Information engagement is experienced as …" (1997, p.

105). At this point I also “experimented” with structure by considering the primary, secondary and peripheral foci of each individual experience. On completion, I combined this new set of summaries with the draft node sets and analysed them together to produce the first draft list of categories, which I grouped by using the “collections” option in NVivo.

This process, of analysing transcripts and summary notes, confirming or refuting categories and themes, continued until I felt confident enough with the process to introduce the remaining 11 transcripts, which I then uploaded into NVivo. The analysis of this second set continued in the same way as the first, and as this progressed, I followed Akerlind’s suggestion to look “in particular for new aspects (or different perspectives of the same aspect) not identified in the original subset” (2005c, p. 174). Incorporation of this remaining subset was followed by the reiterative cycles as previously described, gradually refining the drafts until the final category group emerged. Throughout this process, I endeavoured to follow Sandberg’s advice to remain faithful to the transcript statements by staying “oriented to the phenomenon as and how it appears” (1997, p. 210).

Relationships: researcher with phenomenon, participants and data.

During the data analysis process I was very conscious of those aspects of “interpretive awareness” (Sandberg, 1997) that require mindfulness of personal relationships with the phenomenon (information engagement), the respondents (practitioner researchers) and the resulting interview data. My relationship with the phenomenon is influenced by many years of helping art and design practitioner researchers with information aspects of their research. Despite this span of time and the many practitioners with whom I interacted, the time-constrained, and therefore somewhat superficial, nature of this work left me with many unanswered questions. As my experience lengthened, I became increasingly aware of how much more I needed to know. This study has allowed me to completely reorient my perceptions of information engagement by purposefully looking outside the “confines” of that service into other ways that researchers may experience information engagement.

This reoriented relationship with the phenomenon obviously influenced my relationship with the participants. Some of the participants who, collegially and graciously, took part in the study, I had known for some time; others I had not met before. As the only source of participant data, phenomenographic interviews are crucially important and I was careful to try and ensure the “best” possible data by following suggested protocols where applicable. I have

already discussed the ways that my experience of earlier interviews affected later ones (for example, choice of venues, etc.) so will not discuss this again. During the interviews I strove to create an environment within which meaning was co-created, via questioning and answering. Although this is common to all phenomenographic research, I believe it is particularly true in cases such as this study, which explored tacit experience that is usually unreflectively enacted and seldom discussed. For this reason, our joint exploration of the participants' experience was very much characterised by discovery. For me this involved seeing information engagement in new ways, and because the practitioner researchers would not ordinarily focus on these aspects of their research, it also often also provided new perspectives for them. In this context, it was especially important that I clearly comprehended the participants' descriptions, which involved checking that I understood correctly, with such questions as "When you say X, do you mean…?"

From a very subjective perspective, the interviews, although challenging in many respects, were also very interesting and a source of great delight. Even transcribing the interviews and analysing the data was enjoyable, as I relived the interviews again. From this perspective, I saw my relationship with the participants as being both grateful and happy, so much so that I needed to remind myself not to be so distracted by the beautiful and interesting foliage on the trees that I risked missing the proverbial forest!

This brings me to my relationship with the data discovered and constructed. This probably began at the point of constructing the research question and questions for the interviews, because these directed the future focus of discussion. That relationship continued throughout the interviews, for instance when making decisions to seek clarification on particular points of a discussion. It continued through the transcribing processes, striving to remain faithful to the meanings as expressed, and was particularly prominent during data analysis, seeking the different ways of experiencing that would ultimately coalesce into categories of description and the outcome space. I was aware that at all points of research the researcher both influences, and is influenced by, the data. Again, from a subjective perspective, I feel grateful for the freely given time and knowledge of the practitioner researchers who participated in this study. I am aiming to ensure trustworthy outcomes that realise a productive benefit from the generous investment that each participant has made.

Chapter Summation

This chapter has provided an outline of the phenomenographic research approach, looking at the approach generally, then at how it has been specifically used in this study. As highlighted by Marton's statement that the "point of departure in phenomenography is always relational" (1986, p. 33), it is again important to emphasise that relationality is key to the phenomenographic approach. Just as Bourdieu avoided the apparent dichotomous nature of personal and social interactions by focusing on the relationships occurring between, so phenomenographers better understand experiences by focusing on relationships between people and phenomena. Like Michael Polanyi's explorations of interrelationships between tacit knowledge and explicit knowledge, so phenomenographers also explore relationships "between people and the world as it is experienced" (Lupton, 2008, p. 40).

Earlier chapters have discussed the ways that university research processes can be seen as particular enactments of habitus within the field of higher education. In such fields, social actors embody variations of that habitus—in terms of the particular research traditions that they adhere to—and engage in symbolic struggles that involve working towards increasing, or maintaining, the general acceptance of the approaches that they themselves have investment in. Over time these struggles affect changes not only in the ways that particular approaches are generally viewed, but also to procedural aspects of the approaches themselves. This can be evidenced by the gradual evolution of phenomenography, changing in terms of form and processes, but still maintaining its original focus.

The habitus is at once personal and social, because it develops and functions in relation to both of these states. Creating this particular chapter reminds me of this duality, because in writing about the phenomenographic approach, about why I see it as appropriate for this task, and about how I have chosen to employ it, I bring myself into this study. This is not a study about me, but to some degree, at least in terms of its genesis and enactment, the study is mine and in that sense is a part of me. Conventionally, when writing in an academic context, third person expression is the norm. In describing my own opinions in terms of "this study has found", I create an alternative identity that merely hints at personal involvement. And yet the personal is everywhere: in the research question, in the research approach chosen, in the particular perspective taken, even in the choice I made to comply with the convention of removing myself from the discussion in other chapters. Conventions in some sense act as a link between the choices of an individual and collective (academic) expectations. I abide by those

conventions; I assume that habitus, allow it to become part of my modus operandi; I keep myself apart. Yet sometimes, as in this chapter, those conventions are relaxed and an identity that is closer to my own sidles in.

Inclusion of self allows for reflection on the emotive aspects of a research process. This chapter is of course mostly about those intellectual passions to which Polanyi (1962) refers, the need to understand something better and to seek that understanding in particular ways. There are also, however, other perhaps more mundane emotions that are nevertheless still keenly felt, like frustration, sadness, loneliness and isolation; and also excitement, elation, satisfaction and belonging. At one time or another I have experienced all those emotions during these years of research (although fortunately never all at once). McLauglin believes that "the process of research is deeply entwined with feeling and with perceptual processes. To take seriously the role of emotion in research is to strengthen the research" (2003, p. 69). So this chapter acknowledges those otherwise unmentioned emotions and ultimately reinforces a need to control them, not in terms of disregarding them or ignoring them completely, but considering when they can productively add to the process of inquiry and when they quite obviously don't. In the next chapter, I again move away from my own voice towards those of my study participants, to discuss data analysis results.

Chapter 5:
Results

This chapter presents outcomes that have emerged from the analysis of interviews with 28 art or design practitioner researchers working in universities who, for the purposes of brevity, are referred to in this chapter as “practitioners”.

As noted in the previous chapter, analysis followed an iterative process that explored the interview transcripts, focusing first on the meaning that individuals ascribed to their experiences (the referential component) before considering how those experiences were linked together structurally (the structural component). That process ultimately produced a set of six qualitatively different ways of experiencing within two overarching themes of content (information engagement arising through the content of research) and process (information engagement arising from the processes of research). These two themes (content and process) were, to varying degrees, consistently present across all transcripts. The six key ways of experiencing are named and listed below, and these names have been utilised as labels for the categories of description (henceforth described as just “categories”). Again it is important to note that these categories are collective abstractions and should not be interpreted as representing the experience of any particular individual.

The six key ways of experiencing as identified from the transcript data show information engagement being experienced as: (Category 1) building infrastructure; (Category 2) making connections; (Category 3) socially interacting; (Category 4) altering perspective; (Category 5) experimentation; and (Category 6) modifying states of mind.

A structural focus is used to create the final outcome space that represents the range of ways that information engagement might be experienced by art or design practitioner researchers. In aiming for greater understanding of the ways that these researchers may experience information engagement, this study was not intended as evaluative. Unlike ways of learning, for example, that might be able to be generally perceived as more or less effective, information engagement, especially when engaged in a creative sense, could not be perceived in that way. This reduces the possibility for hierarchically ordering the different ways of experiencing that are described here. Therefore, in common with other non-evaluative explorations (e.g. Toledano O’Farrill, 2008) this study has resulted in a non-hierarchical outcome space. Each and all of the experiences that are described within this outcome space

might equally inform practitioner research but are not necessarily more or less effective, or complex, except in terms of environmental factors or individual preferences or intentions. The following illustration (Figure 7.) presents a graphic representation of the final outcome space that is later discussed in more detail.

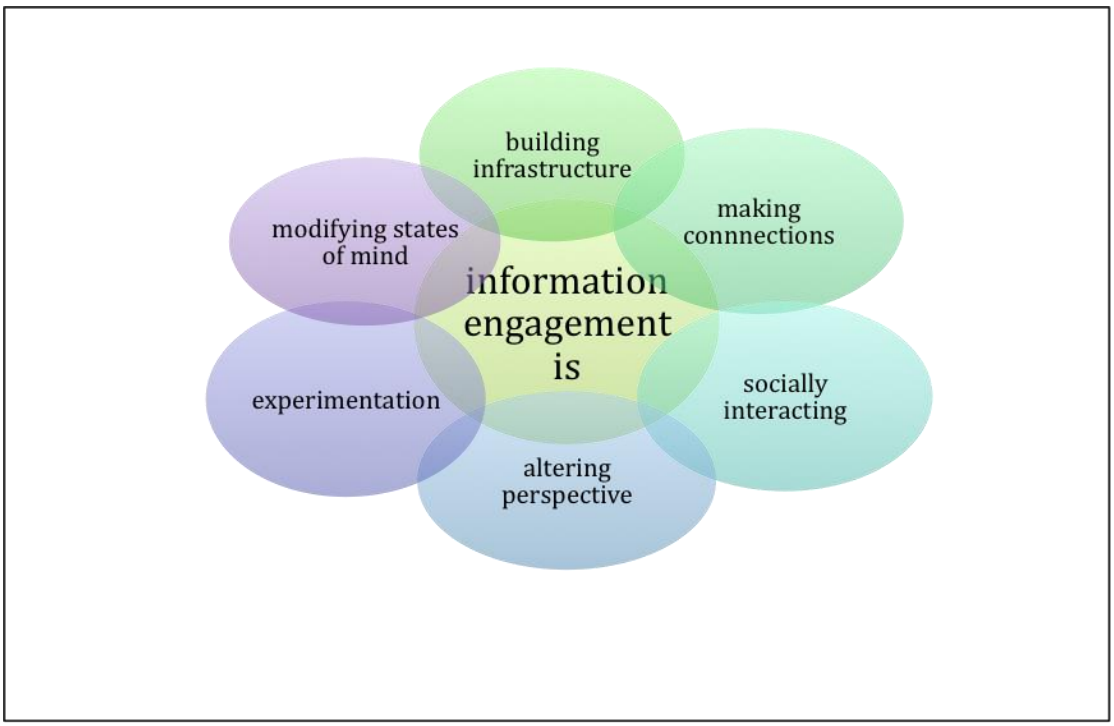

Figure 7 Outcome space

Other sections of this chapter discuss each category in more detail. As previously explained, categories are abstractions that collectively represent qualitatively different ways of experiencing information engagement. Key excerpts from the transcript data provide evidentiary links between categories and experience as individually described. To maintain confidentiality, excerpts are coded (e.g. practitioner 1 is coded as P1, etc.). Any identifying words (e.g. personal or place names) have been removed or replaced (e.g., with XYZ). Discourse markers such as ah, um, etc., have also been removed. All removed sections are indicated by ellipses (…), which are also used at the end of each excerpt. Occasionally, excerpts include clarifying [words] in square brackets that have been added by the researcher. For purposes of brevity, long excerpts are broken into pieces, each presented after the other.

Each category is discussed in terms of meaning and structure, and each also includes subcategories that reflect the reduction process of the analysis. These subcategories have

been retained in order to explain variations in meaning within categories. The structural component of each category was considered in ways similar to the wombat encounter explained in the previous chapter, whereby an experience entails a primary focus (to see the wombat as separate from the surroundings), supported by a secondary focus (a subsidiary awareness of other wombat encounters) aiding that recognition. Outside primary and secondary foci are other related aspects of the wombat encounter (birds singing, etc.) that are marginal to this immediate experience, but could shift in focus if/when conditions change. A summary of this structure of primary, secondary and marginal foci (foreground, background and margin) is provided at the end of each category discussion.

Category 1: Information Engagement as Building Infrastructure

This first category encompasses experiences of information engagement that, in a variety of ways, are primarily focused on building infrastructure. Three subcategories representing variations are building foundations (1A), creating structure (1B), and forming narratives (1C).

Subcategory 1A: building foundations.

The experience of engaging with information as a way of building foundations occurred at various stages within different research practices, but was most evident at beginning points, for example early career stages, as described here:

> (P1): When I was a student … and then even for some years after that … I was a student ... in the sense that I was laying a foundation, you know? ... I was borrowing a lot of books and looking at a lot of exhibitions and taking on board a lot of external information…
>
> (P2): It was also coloured by this desire to educate myself as an artist, I'd just left art school, I was … seeking very strongly my own personal fine art practice. So I flooded myself … deliberately … with things that I thought would ... enhance my culture and my artistic power, I suppose…
>
> (P3): Art is a visual language, at the end of the day, no matter what the universities say, no matter what Edmond Capon says, no matter what the, you know, "I've never been to an art gallery in my life, but I know all about it and my three year old can do that", says. It is a visual language. So to get those visual tools in your toolbox, look at as much art as you possibly can…

This process of building foundations might also occur at other stages of a research career, for example when the commencement of new work involves research content that had previously been peripheral, as described by this practitioner:

> (P4): really I had to start from scratch, so … I was reading historically ... about Australian landscape and painting, about individual artists, as well as … doing all that, kind of background research. But also continually ... looking for … motifs to either appropriate from other … historical images, or from the landscape itself, so … I think it's just a constant process and … it is very fluid…

Sometimes personal preferences can influence information engagement being experienced as foundation building, with some practitioners finding enjoyment or satisfaction in this:

> (P6): I did some work, I think I mentioned it before, based on XYZ … and that was a matter of actually going to the PPY … and actually sitting with someone and getting them to print off all of the names and states …so I think sometimes that … I like that side of it, I like that investigative and data, sort of stuff…

Most of the instances of information engagement being described in terms of building foundations involved building external content, as opposed to building foundational skills. But occasionally, skills development was also described in this way:

> (P5): I'm always doing that. I mean that's part of my … everyday life. Even though I, you know, have got to work, and do things … I'm always learning new software and new programs. And most of it, sometimes it takes years before I even go back to it and find it useful…
>
> (P5): [laughter] I mean that's quite boring actually, learning a software, but sitting down and doing … that, sort of gives me a kind of weird pleasure…

The developmental importance of foundational skill sets was also emphasised:

> (P1): when I know about what's missing from my foundation and then I see someone else, as a student, who is neglecting that, I think … you shouldn't neglect that and I need to get on to that [laughter] because ... to talk about basic errors, I mean, it's a craft that is a slowly built thing, and so it's not like by making one small error, all your calculations go

> out. It's more like, well, if you don't cultivate a certain skill or area, or capacity is a better word, then other things will not happen, you know, that it would be good to have happen…

The ongoing benefit of skills and knowledge ensuing through time and experience, is illustrated by these practitioners:

> (P7): that does build up over time, and as a creative person … I think ... that age has certainly benefits, age and experience has benefits … because you've got a storeroom of knowledge in your brain…

> (P3): I'm very aware, when I started … I had a far more … sophisticated way of looking at art than twenty year old kids and what I believe is that information gathering for an artist starts on the day you're born, or the day you were aware, and start looking out, and doing whatever it is that you do…

Finally, the particular content that any individual work addresses may also influence information engagement being experienced as building foundations. For example, this practitioner, whose work addresses aspects of cutting-edge science, notes:

> (P8): Research is never very far away from the practical work, for me. But there, of course, are other artists that work quite spontaneously, just with what they are and who they are. But for me, my concept is … and that's ever changing. So I need to keep learning at the same time…

Subcategory 1B: creating structure.

This sub-category relates to engaging with information through various processes of creating content management structures. Whereas foundation-building involves accumulating skills and content to activate research, creating structure happens after information activation, in whatever form that takes. Structure might be created to manage built foundations, ideas or semi-completed work, or completed work after exhibitions. The commonality of these different activities is the intention to structure information in some way.

This practitioner describes a somewhat loose, progressive structure:

> (P16): I research as I go … yeah, very much as I go. I'll start looking at things, at different artists and start to read, you know, different ideas … and … I tend to cast my net quite widely, and then, sort of, bring it back, discard some things and pick up others, as I go along…

Another practitioner describes a similarly loose structural approach to deciding whether found items or ideas might be engaged with, or eventually discarded:

> (P26): later you'd think, "Well why was I interested in that? That's a dead end" … But you always, there's always the "just in case", you think, "Well it might be useful", so you have it there and then eventually, you lose interest. Or you reconsider it's potential for becoming something useful … or it ends up …there's something about it that's persistent, you know, it's still on your mind and you think, "Ok, no, it's stood the test of time and it's still of interest to me, and I think now might take a focus in my practice, because whatever else I've been working on has drawn to a conclusion…

The desirability of finding a way to structure information engagement is emphasised by this practitioner:

> (P5): I've got a lot of materials that I've archived and I think a lot of it is actually trying to find a way to structure my practice in a way … given that you don't have, as an artist, anything, you don't have your days structured in any way, and you could pretty much do whatever you want in a given 24 hours. I have this need to find a way to produce…
>
> (P5): I'm trying my best to find a structure and I'm trying my best to find a system. And maybe finding a system and finding a structure kind of gives, it might be enough probably. I don't know if I'll succeed…

This link between information structures and the creative practice itself is illustrated by another practitioner's description of a vast, continually growing, collection of digital images:

> (P9): I do it by camera, so that I know the idiosyncrasies of the files … and all that kind of stuff, so I've got databases for every different camera. And in each of those, they all have very similar … topics, or subject areas and I've probably got about … I've never counted them, so I couldn't tell you, but … I think I've got about … between 40 and 50 main subject areas and then, within those they break down into any number of categories. I really

> couldn't tell you how many folders, like it's a folder structure, that I have … and I'm actually … at a point now where that filing system, that information that I've got, I'm now turning into a work, in it's own right … so I'm sort of twisting, I guess, that idea a little bit…

As in the previous sub-category, personal preferences may also influence information engagement being experienced as a structured process, as described here:

> (P10): I try and keep really thorough records. I've basically kept a record of every single visual idea that I've had…
>
> (P10): I guess I'm just a naturally very, kind of, frugal and efficient person and I like to plan, yeah. I don't feel, it's strange, because I don't feel any less creative for it. But I've always been one to plan, an efficient kind of planner…

The necessity of keeping records of completed work can also influence structural approaches to information engagement, as described by these practitioners:

> (P7): I take a lot of photographic reference because it is a bit disconcerting that, you know, you put a lot of research and thought into what you do, and it disappears…
>
> (P7): I have it photographically and … I have a show reel of my film and television days, so that's on VHS actually. I have a folio, very well set out, and of course, I have the digital files in my computer, which I use for research all the time…

Whilst only some practitioners might experience information engagement in such overtly structured ways, most used creative or visual diaries to structure ideas and influences:

> (P13): One thing ... I've been taught to do, is keep a visual diary. So it is exactly that, it's a journal, where you compile ideas and influences and thoughts and … visual thinking, sketches, you know, drawings, or whatever and … it's interesting to look back across the years of visual diary keeping and seeing that patterns emerge…
>
> (P20): I use my journals far more, in a … robust way, whereas before they were more of a … bit of a memory prompt, you know? Or something nice to read later on, now they've become more of a research implement. So I put stuff there and I, or an idea with something, a few months ago, I'll say, I'll put that for the future, I'll play with that later on. And I dig that up again, and what was imbedded in it, it's changed its meaning already…

One practitioner, when beginning university research, efficiently merged academic reading notes into the sketchbook structure:

> (P2): the marrying of the sketchbooks with the reading ... to a normal person might not sound that significant ... you know, in a normal life. But for me, it became really important, because it's about the capturing of ... ideas and thoughts that are organic. And so that makes, that takes my research style, I guess, into a slightly different place. But it's … not an academic process, as such, I guess, in a conventional way…

Subcategory 1C: forming narratives.

Engaging with information as forming narratives relates to the previous subcategories in that it involves both foundation building and structure creation, but it also involves building an identity or life story. This emerged from the data in three slightly different ways, first involving the purposeful action of performance art practitioners, as described here:

> (P11): I develop these different characters ... some are more possible than others. I call them my different persona, or personae … and usually what I do is, in developing the characters, I may be inspired by something that is happening on YouTube … so for instance, I've got a teenage boy … who I perform. So, I've looked at as many Australian teenage boy blogs as I possibly can, so I can pick up various characteristics. But then, they may also be informed sometimes … by [popular singer's] death has informed another character, who's obsessed with [this singer], is a huge fan. So it could be something topical, or it could be, often, something on YouTube. And so, I plan them, and develop their characters that way…

The second instance is more an incidental process of information engagement occurring when individuals are inspired by key others, who could perhaps be described as creative heroes. This is more than foundational learning: it involves such profound engagement that these "heroes" merge with a practitioner's own life-world, becoming integrated into a practitioner's own personal narrative, as in this description:

> (P2): as an artist, you create your own family, create your own ancestors and … you collect … all these people along the way. They sort of, help you and guide you, in the same way … that a wise grandparent or uncle or something might, or you look back through, down your family line and you see somebody who's like you, you know, oh this one wrote

> poetry and this one was … different from the rest of them, or whatever. When you do that, you seek new people and you seek … another family. Like I have two families and in one of the families is all these, these people mainly who I've never met, the art family…

This experience of information engagement (as forming a narrative) sometimes occurs at foundational levels providing initial support and inspiration, but ultimately provides a springboard for moving away, as the same practitioner describes:

> (P2): And at some point you have to say, well … thanks very much for what I've learned and now I have to go out into the big world myself. So … you have to leave them … to some degree. And for me the ones that I need to leave the most are the ones who do what I do … who end up with a visual image … that's why a composer or a writer or, or a creative thinker in a different way is of more interest to me than visual artists…

The third instance involves focusing on forming narratives around aspects of life that would not normally be considered this way, such as activities of everyday life. The actual information content emerges from observations of daily living, then engaging with that information to transform otherwise mundane activities into artistic research endeavours, as described here:

> (P12): I see it as a pretty basic practice of sort of "drawing from life" instead of actually doing a drawing of what's going on in your life. I guess I'm documenting this thing, so … it really comes down to a little bit of a formula, but I'm looking for, I usually try to look for a problem, or a dilemma, or a situation that's going on currently in my life … so that's … a pretty "firmed up" thing … and then, really, I just go about trying to problem solve or try to find a solution…

> (P12): I get a lot out of that, these kind of, I guess, personal projects, things that … you put all this energy into, which an individual finds important, and is a major distraction from larger, or grander narratives of what you … should be considering, what is significant…

Category 1: structure summary.

Building infrastructure is the key distinguishing feature of this category. In terms of the overall category structure, a focus on building foundational content appears in the foreground of these described experiences of information engagement, particularly as represented by subcategories 1A (building foundations) and 1B (creating structure). In the background is an

experience of information engagement as a process of building identity, particularly as represented by subcategory 1C (forming narratives). This primary and secondary focus appeared to be most strongly linked to building *content* infrastructure, as opposed to the building of skills. The lack of emphasis on skill development perhaps reflects the advanced skill levels of these practitioners who are researching at or above higher degrees, but could equally reflect what was happening at the time the interviews took place.

The structure of focus, as assessed by the data supporting Category 1 (Information engagement experienced as building infrastructure), is perceived with building foundational content in foreground, building identity in the background and accumulation of skills on the margin. This structure of focus, foreground, background and margin, is visualised in Figure 8.

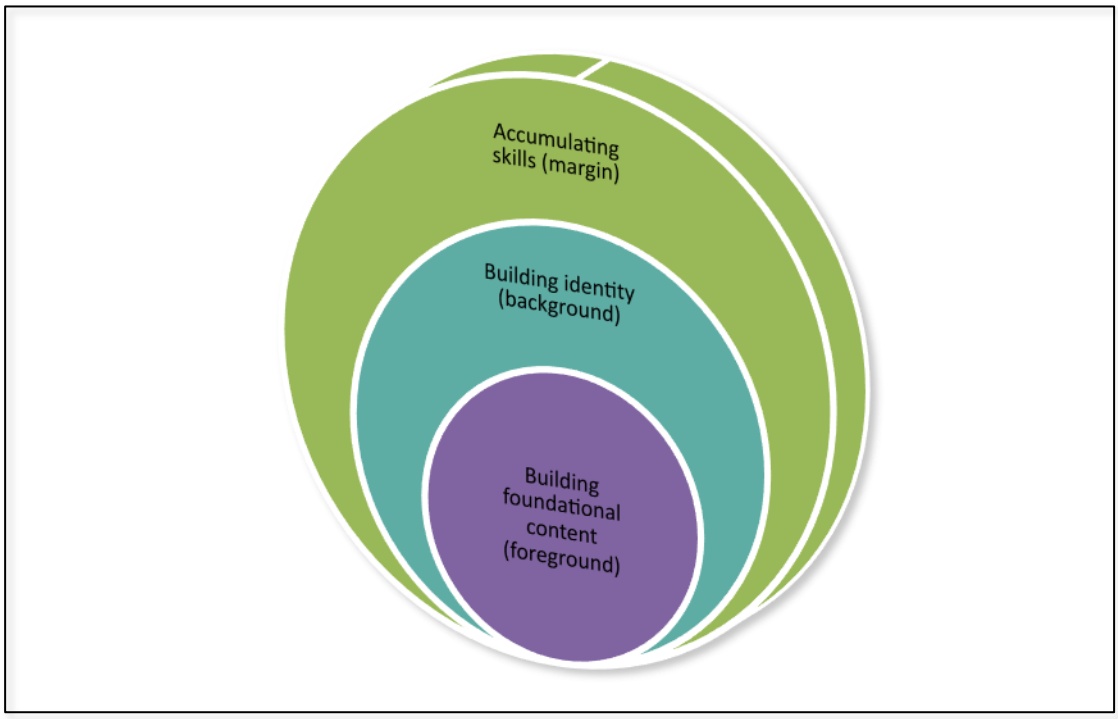

Figure 8 Cat.1. Structure of focus: building infrastructure

Category 2: Information Engagement as Making Connections

This second category involves experiences of information engagement being represented in various ways as discovering or making connections. This category also encompasses three

subcategories: openness to serendipity (2A), tacit integration (2B) and multidimensionality (2C).

The difference between this and the previous category relates to the level of structure. The experiences described here are more embodied, and therefore less overtly structured. Although some structure inevitably exists, it is considerably more fluid and loose than that described in Category 1.

Subcategory 2A: openness to serendipity.

Being able to be open to serendipity may involve prior reflection, for example as described here:

> (P3): where you are kind of thinking about the inspiration that you've had and whether you'll pursue that path, I call "percolation" and during that percolating period, I just … I don't specifically do anything … I more or less just keep an open mind and I have this philosophy, and it works for me, that because you are tuned into, or just thinking about, a certain thing … for the ease of this situation I'll say Leonardo da Vinci, so because I'm thinking about Leonardo and his measurement of man and how that … interests me. All of a sudden, anything that concerns measurement, or body, or Leonardo will become, will register on my … sort of, intellectual radar…

Other practitioners describe similar states of openness to the possibility of information serendipitously occurring:

> (P7): I think that once you connect your mind into the idea of research, I think you need to be really open. When I walk down a street, it's a street just near the university here where they make paper products … I was passing when I went to the movies the other day, and I looked at it, and I thought, I wonder if this is someone I could interview. Or … how interesting their shop is, is there something that I could take from this place, or this person, for my thesis? I think, yes, I think you just have to be like a sponge ...

> (P15): I draw upon film and TV for image material, for what I do. There's definitely a connection there. And then there's just the broader social life now … in terms of advertising is everywhere, you know, in your physical space ... you walk around and see stuff, and, I guess, as a visual person, you train yourself to look at stuff and think about

> what that means … well, for me, I look at it and you think about how that could be used, or not, or discarded. And that goes on all the time ...
>
> (P17): You never switch off from art practice. It's always in your head and its always consuming you and there are things that you see, that can be bizarre things … could be driving home, I don't know, and seeing a pelican standing on a light and suddenly making a connection with something that's in the studio on the floor, or something. You know, there are always those odd things that happen, or something you read, or something you see, yeah, or squeezing your toothpaste onto your toothbrush in the morning and suddenly …you think, Ah! Gosh … that's a kind of solution for…

This openness to serendipitous possibilities relates not only to external factors but also to information arising from the making process itself, with many practitioners anticipating surprises:

> (P18): experimental art practice, actually means that ... you can't always know what you're doing. You can't pre-scribe absolutely everything that you're going to do, because that's the nature of experimental practice. You take leaps, intuitive leaps, or … because of some accident something new happens, and … you're actually … accounting in retrospect for some of the things that you've done…
>
> (P19): every painting is the end product of a number of choices. And another hundred thousand paintings that you didn't do because you made these choices to get to this … particular end … I never start off with … because of the nature of the work that I do, and the kind of work that it is, I don't start off with specific … drawings or detailed drawings. Jeffrey Smart does detailed drawings of his paintings, grids them up, enlarges them on to the canvas and then paints it … but the nature of his work is such that he can do that. I could work that way, but, it's just like, once you get the idea … you don't bother doing it anymore because, to me, it's the not knowing that's the exciting bit, it's the *not* knowing how it's going to end up and so, I suppose the notion of researching, in that way of thinking, is that it can be anything that happens along the way…
>
> (P17): the work, kind of takes on it's own journey, through the different processes or things that you manipulate, or … what you do to it. And so you can, at some point, decide well, will I go with what it's telling me? … Because I'm making it and intuitively there's

> stuff that goes in there anyway, I believe it's not just completely divorced from what you're thinking…

Subcategory 2B: tacit integration.

This next subcategory (tacit integration) moves from connection possibilities towards connection actualities. As discussed in earlier chapters, human actions, particularly skilful ones, are guided by tacit knowledge that is subsidiary to the main attention. Tacit integration occurs several steps beyond this, when tacitly known clues cognitively coalesce to suddenly enable different modes of perception, ultimately allowing new insight (Polanyi, 1967).

Sometimes practitioners are quite conscious of underlying knowledge influencing information engagement but do not necessarily see this as contributing to new understanding, as described by this practitioner:

> (P15): one advantage I've had is, I've come from a background where my Mum was very much into theory. So, for a long time, even prior to uni, I've sort of had, not in-depth experience, but a level of exchange around, for instance … feminist theory, structuralist theory that … has meant that for me, a lot of this is ... almost becomes unconscious, subconscious, in that I'm very comfortable with it. And I guess I've found through the whole degree process, everything I've done has been an extension of what I, sort of, know. I really haven't had a period of coming across completely new ideas…

But most people are not fully aware of the influence of tacit knowing on new insight because contributory cognitive paths are difficult to trace back. The point of tacit integration involves "a mechanism which can produce discoveries by steps we cannot specify" (Polanyi, 1966, p. 5). This may be why connections so discovered are perceived to result from chance, as illustrated by this practitioner's description:

> (P16): it just happened to be stuff I either was reading, or had read. Actually I've always written down these quotes that I quite like, or relate to what I'm interested in at the moment … you'll be working on something and then you pick up a book to read and there'll be a paragraph in it and you'll go, Oh my god, that's it! …

Sometimes, however, information engagement occurs at significant moments that are more easily remembered, as described by one practitioner who, diagnosed with cancer during her PhD research, was receiving radiation therapy:

> (P8): all of a sudden I realised that I was being treated with light. And that was extraordinary, because I hadn't been able to decide, I knew what my thesis was about, but I hadn't been able to decide what my practical work would be for the exhibition. So, here I was, being treated by light. So I started talking with all the technicians and the physicists about this linear accelerator, and how it created and controlled light, into a beam so that the beam destroyed the cancer. You see, so straight away I knew that that was going to be my practical work…
>
> (P8): if that randomness had not happened, I daresay the exhibition … would never have occurred. Because I wanted to know about ... the invisible, at that point in time, whereas I don't think I had even considered the invisible light before…

Sometimes making connections via tacit integration might also be perceived as intuitive thinking, as explained by this practitioner:

> (P20): you know that whole thing of intuition, it's actually, how do you know, sometimes, when you're driving to a place that you've never been to, how to get there? Well, you do know, because you've seen maps, and it's all that subconscious knowledge, everything's ticking away there that we don't tap into, so I think intuition is that, just serendipity, that it's been about recognising serendipity in the first place…
>
> (P20): you're ready for it, you know? … And it's an intellectual movement, you've *identified*. So serendipity is that wonderful surprise of what you're thinking. You know, it's like, "Oh, of course!" … On a conscious level, you haven't recognised it yet, but subconsciously its there saying, "Oh you idiot, look! There's an obvious connection!" …

Subcategory 2C: multidimensionality.

Whereas being open to serendipitous information opportunities and making new connections through tacit integration is likely to be a subsidiary process, information engagement as multidimensionality leans more towards intentionally planned actions. This emerged from the

data in different ways; for example, it might involve engagement with many different forms of creative arts:

> (P14): so much of what has helped me as an artist, ever since I was a student, has not necessarily come from … fine arts or sculpture, although that's certainly the case, or painting, but from cinema, from poetry, from literature. Which … I found more readily, echoes of what I needed to do and understand as a young artist, as a student of fine arts. In those disciplines, that then brought me back to sculpture and painting and with much greater acuity, and much greater, more enhanced ability to really understand what my instincts were telling me…

> (P17): I'm interested in design, I'm interested in architecture and in art, and I'm interested in fashion … and I'm interested in textiles. And I guess textiles is quite a fascinating thing, because … it goes from anything that's something inside the body these days, which is … new technology and they can make all of these amazing grafts and things that look like lace. It's from that extreme to tensile structures in architecture, to engineered things, and to things for installation, and things for beautifully embroidered embellishments for the body, you know, it is quite an all encompassing and really exciting area…

Experiencing information engagement in multidimensional ways may also involve seeking influences from academic disciplines adjacent to, or different from, art and design, as described by these practitioners:

> (P11): I'm dealing with so many different areas because my project encompasses … Internet theory and encompasses sociology and encompasses performance theory, it encompasses, you know, art and performance art, as well … it's slightly overwhelming, but very exciting that there's lot of different areas…

> (P19): the art that I do is … based on a whole host of things, but it's about the … visual experience, I suppose … The stuff I'm interested in is wide ranging ... I've been doing a lot of reading in ... science and complexity, and chaos theory really interests me. But also … things like history ... food and cooking ... the history of place, especially local history, but then the generalised history of place and of Australia, and about our place in it, and our experiences of … a place. Now that's not, it's not a specific thing, some peoples' art is

about a particular thing, mine isn't about that, it's about all of those things and yet, none of those things…

Sometimes multidimensional engagement emerges through relational approaches to research:

(P8): [my researcher supervisor] told me at the onset … that when I was researching a concept … I should think of it as … a transparent dice. And he said if you do that, you have one numerical dot on the face, but you can look through it, and you can see three numerical dots, on the other side. You can see at the top, two numerical dots, and down below four. On the far side you can see five. That's six sides, but as you're looking at that, you're looking at different perspectives. So you're seeing the far edge of the rim, on the right hand side. On the left, it's a different rim. At the top, it's the nearest rim you can see, almost an ellipse. And down below … a different edge to the dot and the hollow. At the far back of the transparent cube, you can see your fixed dot? But they're not as clear as the front dot. Now, he said, if you think of those sides as philosophy, history, politics, culture ... science, technology, well you will get a total perspective of what you're researching. And [he] told me not to forget to look under the cube, which makes it a total of seven perspectives. Because you often see in this culture, something reflected. So I kept that in mind all the way through, as I was researching…

Category 2: structure summary.

Making connections is the key distinguishing feature of this category and is the primary focus (foreground) of the practitioner descriptions presented in all three subcategories (openness to serendipity, tacit integration and multidimensionality). Despite being otherwise unstructured, experiencing information engagement in this way becomes a learned inclination, perhaps like Hemmig's suggestion of "intentional, engaged passivity" (2008, p. 354). Research (e.g. see Slagter et al., 2007) shows recognition of serendipitous information being more than luck, but also a practiced mindfulness that broadens attention breadth. This type of learned "noticing" ability enables insightful connections or "mental leaps" (Holyoak & Thagard, 1995, p. 192).

This primary focus on making connections is reinforced by successful experiences from the past, when individuals were in the right place and time to recognise the information that appeared. This memory of success is therefore a secondary focus (background) that informs connective possibilities. Finally, despite being mostly unstructured, some structure inevitably

exists in the margin of these experiences, particularly when engaging with information in purposefully multidimensional ways.

The structure of focus, as assessed by the data supporting Category 2 (Information engagement experienced as making connections) is presented as increasing the potential for connections in the foreground, past successes in the background, and structured processes in the margin of focus. This is visually represented in Figure 9.

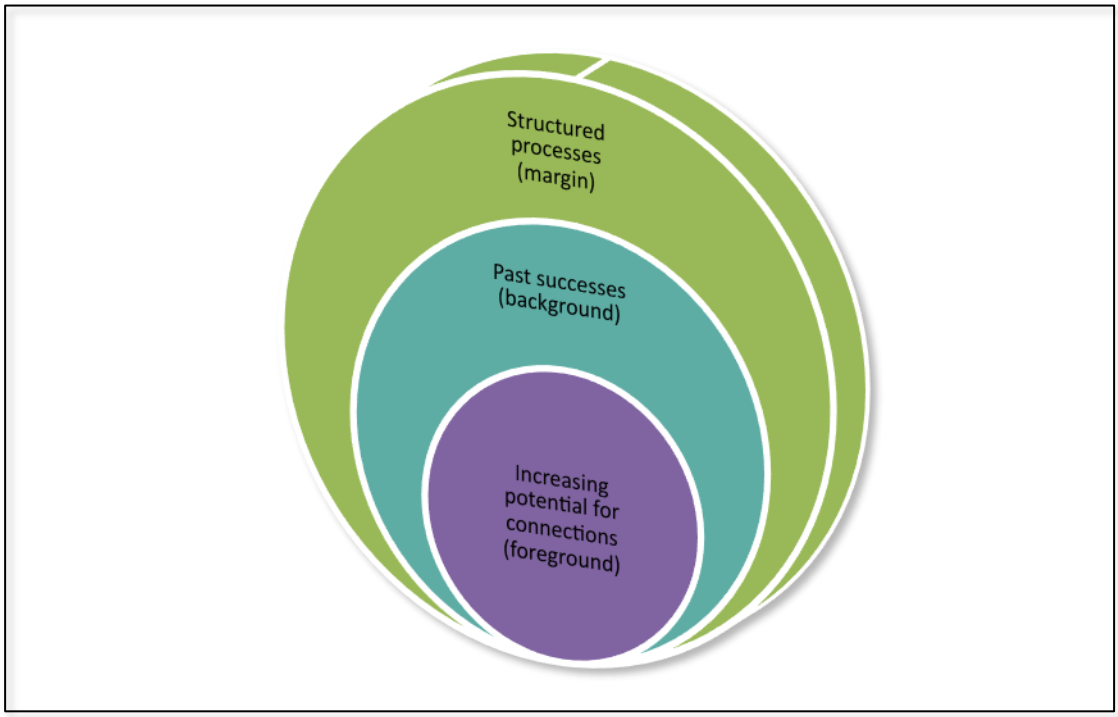

Figure 9 Cat.2. Structure of focus: making connections

Category 3: Information Engagement as Socially Interacting

This third category involves experiences of information engagement through inter-relationships with other people, both historical and contemporary, close-up and at a distance. Four subcategories represent variations of this interaction: relationships with texts (3A), personal involvement (3B), community involvement (3C), and intellectual passions (3D).

Subcategory 3A: relationships with texts.

Reading is often a solitary activity, but social interaction still occurs when words stimulate ideas and discussions with others. The experiences described in relationships with texts are somewhat similar to those in 1C (forming narratives), but here relationships are much less intense. Unlike relationships that interweave with personal self-narratives, these provide ideas and inspire creativity, but the influence stops there. Many practitioners described texts as important creative sources:

> (P4): for me reading is a really important part of the process too ... I think reading can really influence the direction and the content of your work ... I just see that as … another ... element that, kind of, ends up ... determining what your image looks like or the way you think about that image…
>
> (P16): I started to read ... more contemporary philosophy, and found that I quite enjoyed it actually, and I could understand how my work sort of related to certain thinkers…
>
> (P21): I find that ... I'm mainly informed by reading … and that tends to … translate itself into my practice…

For some practitioners, book collections are not only important for practice but are an important part of the preferred environment:

> (P18): there's an aspect of myself, which is … probably really quite deluded … but I like … the figure in Dracula movies, you know, he walks through this vast house with it's own library [laughter] … And really my house and library is nothing like that [laughter]. But I like the idea of that. And I tend to, if there's a book, that I think is useful, that's going to be useful to me, I'd rather just buy my own and stick it on the shelf. And know that I can have access to it anytime…
>
> (P14): I'm a bibliophile, you know, I can't move in my flat for books … and you know, boxes around behind that filing cabinet [in office]. I'm looking at the art of the world all the time, that's just me, that's just the way I am…
>
> (P5): But, I mean, one of my dreams one day … maybe, like, decades away, is to have a space where I can have a studio, and like upstairs to have all this library of books ...

Becoming a university researcher might be perceived as finally getting time to engage with texts in ways not previously possible:

> (P22): it feels vaguely indulgent … you know, looking at the references at the backs of books, oh, nobody's mentioned that one, that's interesting, that text has got footnotes, let's have a look at it, you know. There's this wonderful little, sort of, twitching at the edge of stuff, you know. Where generally, when you're working outside of that environment, you don't have the time…

> (P22): things do develop, you allow yourself, I suppose that's it, you allow yourself the space and the time to take things to … a finer sand, you know … but, I think that, I can't imagine that there's many people here, doing a PhD, that don't accumulate books and references. And they've never known, they've just had this big pile and looked at them, and now they have the time to go through them and … find out what it is that you liked about that, [why] you had an instinct to go in that direction…

A primary emphasis on texts is not always true; some practitioners preferred to explore information in other ways first:

> (P6): I learn better from experiences than I do from books. I know that in myself, so if I go to an exhibition and I see them, spatially in a place, it resonates with me for longer than if I look at them in a book…

> (P10): I only ever, sort of, researched all those technical terms, and that kind of thing … just to make sure that … my terminology of what I'm doing is right … right at the end, that all came afterwards…

Some practitioners are conscious of needing to effectively balance reading *for* practice with the practice itself, as described by these practitioners:

> (P22): I trained, just when everybody was destroying their practices, I suppose, with too much Foucault and Derrida. I would read, under my own volition, rather than under the guide of the university. And a lot of people read themselves to death. There were a few years, in the eighties, when … making work was replaced with the theory and there was all this finding the way back to the making *is* thinking, *is* theory, *is* research ...

(P8): I'm not interested in illustrating what they're doing. I'm interested in, what they're doing … informing what *I'm* doing. And I think that is probably the danger for artists working with physicists … whereby you could be seduced by their research. And there comes a time when you have to just put that part aside and really explore your own ...

Subcategory 3B: personal involvements.

This subcategory presents information engagement as a more personal experience, showing research being informed more or less consciously through various personal interactions. This might involve personal connections with content, for example when painting portraits:

(P1): I need to know the person and that adds levels of difficulty, but also makes it easier in some ways. But with all subject matter, I would say, so far in my painting life … I've found that I do better things with a subject that I know and have a personal attachment to. Even with landscape, you know, a place that I've lived in will bring out a deeper response than a place that I just go and have a, sort of, surface response to ...

Family connections might present other opportunities for information engagement, as described by this practitioner:

(P25): my Dad is a Chinese brush painter, that's very helpful … to talk to him and he explained things to me … those are things from his knowledge, which, you know, would not be found probably somewhere else…

Interconnections between information engagement and personal involvement might be only realised retrospectively. For example, a practitioner completing creative work whilst her father was dying was surprised to find strong, but unintentional, research connections:

(P16): I stitched a lot of that sitting round, you know, with him before he left home and … at the hospital, then when he was in the nursing home for the last few days … and I started that work saying, "I'm just making work that I feel like making" and at the time I didn't really relate it back to any great, very much to the research I was doing. I just wanted to make that work. But by the time I'd finished it, I realised how closely it was related to the research that I'd done, it fitted in so beautifully ...

Sometimes information engagement as personal involvement is experienced as an exploration of self, as described here:

> (P10): I think, to actually ... investigate it … as part of … academic research … the body of work and the thesis backing it, was sort of like a consolidation of my own personal philosophy about it. And for me it was a process of clarifying, you know, the way … I felt about the world…
>
> (P10): I think in doing what I did, I [was] really … cementing, you know, that view of the world in my work … it really helped me, you know, it's a very broad phrase … to say "figure out who I am" but it really contributed a large chunk to that … Sort of like, these are my views on the world and it's not, it's not to say that … they're not liable to change, but, now it just like that part of me is built ...

Subcategory 3C: community involvement.

Experiencing information engagement through community involvement appears in the data in a number of different ways that include the university community, wider socio-political involvement, or various modes of negotiation and interaction with particular communities that provide the research focus.

Working in a university community provides ongoing, day-to-day benefits such as ready access to trusted colleagues:

> (P6): I would spend more time talking to my colleagues here about my art practice ... again NAVA, places like that you're members of and there's a sort of a support. But no, certainly it's more my colleagues here … and art colleagues, who are not necessarily associated with the university as well, I've got a very strong group of those…
>
> (P13): you get to a point with your studio practice where you need more information, where you come to a brick wall. You've got to go back and constantly feed into it with ideas, and thinking, but I … do find that I, the best ... channels open when I can just sit and talk with people. And you talk about issues or you talk about ideas, or … yeah, you put your problems on the table. You lay yourself in front of them and they can sort of look over it and say well, you know, maybe you should go in this direction, or this person has spoken about that. So you draw on other people's expertise and experience…

For practitioners enrolled in research programs, regular access to supervisors and the discipline imposed by academic calendars can strengthen information engagement:

> (P15): the supervisor I had, there's a lot of history, in that they have a lot more, just a lot more time. They've lived a lot more also, so, you're hoping that they can take their own experience and I guess, show you … from their experience, things that can go wrong in your practice, or that are going right, etc. But I think, yeah, one of the most important things is the history, is the time that they've spent producing art and what they've learned from that. That is really important I think ...

> (P4): you've got all these deadlines ... that are created for you ... you're … in a community … of people who are also engaged with research and ideas. I think it offers you an opportunity to be challenged ...

> (P28): the wonderful thing [laughter] … about being in the university is that people are really genuinely interested. And they are interested in me putting it into a context where it makes sense. Well, when I do it for them, I do it for me as well. And I don't know that I would've necessarily be doing it in that way, were it not for the structure of the degree…

Community engagement with international scholars is a common experience for university researchers. This type of information engagement might involve interacting with visiting scholars, conference participation, travelling study tours, or artist residency opportunities. Such experiences can amplify information engagement, as illustrated by this practitioner's description of an overseas residency:

> (P2): it was the site of artists, all were, and I guess the university experience at it's best can do that too, you know, where you're all thrown into a place and there's this sort of collective excitement … about being there. And … I don't know if that's just something that might just happen … at the beginning of something, because we all knew we had a short time there, three months, a long time and a short time. So, so there's a, just a sort of heightened energy and a sort of feeling of not missing anything…

Presenting at, or just attending, conferences or seminars can also enable more intense information engagement:

(P13): you go to … a conference, or a symposium, and that would then give you a whole pile of new things to investigate or to find out about ... I remember going to one ... in the MCA. And it was about ... re-writing the spaces of the city, in terms of art works or whatever. But it just opened up so much for me and a whole range of actual experiences of going and experiencing people's art works in the city … interventions into alleyways and ... lurky places in the city that were transformed, for the night, for example, into a audio-visual experience, and stuff like that … and so that, sort of, fed my thinking, really fertile ground in that little experience there…

(P8): I gave a seminar … to the physicists, showing my work in progress. And I told them at the beginning it was going to be interactive because I had reached a point and I needed to make a decision and I needed them to help me make the decision…

(P25): when I was doing … my presentation in China, particularly at the end of last year, that was the end of my research … even until then I wasn't, I hadn't been … confident about … acceptance from them, because I knew that I was doing a contemporary … I was doing drawing here, and understanding of drawing [here] is very different to what they do over there…

(P25): and … the feedback was quite good actually, I was surprised, people accepted what I'd been doing…

Sometimes a practitioner's work involves information engagement that necessitates immersion into sections of the wider community, particularly if the research addresses socio-political issues:

(P24): I was making large-scale landscape, photographic, geopolitical work, there. I was in and out of mosques, and … in and out of borderlands around the Middle East, and contested zones around the Middle East…

(P24): that area … it's bathed in blood … and it's bathed in blood from the Crusaders onwards there. So that was, sort of, this is a highway into the Middle East, so it's one of these things that you can read into the landscape deeply and the people. What's funny, in Australia, people look at that as a photograph of a landscape. In Australia, it's a flag on a bit of rock. But the people from there, on both sides, know it very well…

Sometimes social immersion may occur more vicariously, via publications produced by particular groups, such as this practitioner's exploration of fashion magazines:

> (P9): what I'll do is, I'll go through that magazine and I will ... document everything in it just from an editorial perspective, so anything that's mentioned editorially ... and I'll classify it whether it's a shoe, a bag or makeup ... what the brand is, what it is and how much it is ... and then … I'll … get an idea of how much it is to be in fashion. So for example that one, I used a Harpers Bazaar and I found that, that particular issue ... if you wanted to be fashionable for that month of May, you would need 7.2 million dollars ... to do that … And then, I … juxtapose that with what the income was of the average reader, which was $48,000 ... and yet they're aspiring to this AB demographic, which I imagine would have to have hundreds of thousands. And so I'm interested in all those idiosyncrasies … between data ... and the disparity…

Sometimes information engagement with wider communities involves negotiation. This is most obvious in instances such as the geopolitical work mentioned above, needing to negotiate access to restricted zones. This usually involves making the right contacts, but is always risky, as described here:

> (P24): as we were going through the … military blocks, they were looking for Al-Qaeda and Palestinians and they had tanks pointing at the car. If they didn't like you, they'd fire and … the driver just came up and they'd say "Where's your pass" and he'd just bring out the yellow stick-it note, you know, and say "Ring my cousin" and they'd look at the guy and go "Oh, ok go through". Because he [the cousin] was the Commanding General of the whole area, so we bluffed our way right through ...
>
> (P24): We'll probably do it again, but we'll just have to be really careful, because you've always got to be informed about what's happening, what's happening on the day…

At other times, community involvement involves negotiating with material suppliers, for example convincing commercial companies to produce something out of the ordinary, as described by this practitioner:

> (P17): there are some people who you think … just the way that they speak … they get bored with … just cutting bits of metal for cars, or whatever it is they have to do. And so you kind of interrupt that process and stretch their thinking … and they quite enjoy that…

> (P17): It's a challenge. And … they get on board with you and you know that, usually from the kind of beginning conversation that it's going to work ok. And you can … invest some time and energy into that process. So for me, that's another aspect pertaining to the research that I really enjoy ...

Prior negotiation is often required when considering commissions, as this practitioner found when a completed interior was modified in ways that compromised the design:

> (P7): possibly if I had direct contact with that end client it might have been, worked differently. I think I'm quite good at selling my ideas and had I had direct contact, which unfortunately doesn't happen very often … then I could have talked them round…

> (P7): it gets very, very tricky. And ... sometimes … you might have to turn down a job if you feel that your creative reputation will be jeopardised…

Exhibiting completed work may also involve negotiation, for example with curators, as described here:

> (P22): I make these great, big, fragile things that span a whole room, you know. And I love all the complicated, I mean, part of the work is talking to the curator. They seem to get very, very nervous. And you've got these conversations about roping things off … and its kind of fantastic, those kind of conversations. They are so nervous about it falling apart. And they want to change the nature of the whole thing. And then there's designing a way … of looking after the work, and that becomes the work as well and that becomes just as fragile, you've got to look after that as well. It has these layers. It's wonderful…

Perhaps the most common community engagement is with audiences at exhibitions. Sometimes that engagement is perceived as an additional source of information, as described by these practitioners:

> (P9): I get a lot out of the audience ... it's very interesting to see how people respond, to the scale of the work for one … and it's interesting to get people's reactions. And it's interesting to see what they see that I haven't seen … so I find … that final … exhibition and talking to people after this is finished really interesting and exciting … because it makes me, quite often, do something in a very different way…

(P12): I find that I communicate with an audience far better … by picking out something personal … and something kind of absurd, really strikes a chord, with a greater audience. And, you know, I guess like any artist, you're looking for a connection. And I find that. I get the biggest buzz out of doing that ...

(P23): I find, how can I … construct the things that will allow, you know … an openness, but at the same time, thinking, well, I still want them to understand this kind of relationship that I'm doing here, so how am I going to get them to do that? And so for me, it's about, how are they actually engaging with the space, because that's what I find really interesting. And I see space as equally part of my research, as the kind of content, with the images and the material always interrelated…

But audience interaction can also be inconsistent, as described by this practitioner:

(P1): [an] eminent painter at my last exhibition told me he thought it was very sloppy…

(P1): that really made me think, because I respect him and I admire his work … and he's very hard and absolutely honest, and that. So you know that when you do get a compliment, and I have had compliments, here and there, that that's real. But that made me think again, because I didn't think it was sloppy and I'd really striven. And I can see in retrospect what he meant. And in fact I've come around to thinking that perhaps he was right. But at the time, that was a shock ...

(P1): You can get vastly different responses, like that last exhibition, the one he said was sloppy, others had very positive responses about. And so, it's quite baffling sometimes to get completely opposite responses to the same work and … it does give you something to think about, "What am I actually doing? What's working? How is it working? What's not working?"…

At other times exhibition engagement contributes less to the ongoing research processes, as described by these practitioners:

(P19): I never worry about what people think about the work that I'm doing. I have … no desire, or need for ... criticism in that way, or ... peer support in that way. It doesn't, I think because I'm really only doing it, it's a very selfish thing that I'm doing, for me. I really am. And … it's nice when people like it and people have actually bought work. I've had

> work in shows and people have bought stuff. But, I look at slides now of some of the things I've sold and think, "Damn, I wish I still had that, I could have a look at it again". But of course you can't. It's like your little family that you build up and, you know, you don't want to let them out into the world. It's odd actually…
>
> (P8): you have to trust that what you've done is what you want them to do, and that is engage with everyone that comes in. So, I'm in that position of having withdrawn now and I'm letting the paintings, or the drawings, have a life of their own … yes, so it is interesting hearing, getting a bit of feedback … but it's also a little bit lonely, mmm … it's almost like I'm at the point where I'm thinking about what I'm going to do next ...

Professional reviews of exhibitions were also deemed less useful for informing ongoing research, as described by these practitioners:

> (P6): when someone writes up your work in a journal or something … or a review of it, and they add another … level of observation to it, that you might have had in the back of your mind, or it might have been not an overt thing you were conscious of in the work, but then suddenly someone, I suppose, verbalises that. I kind of like that, and I reflect and take on board that, quite a lot … [but] no, I'm usually off, onto the next thing again ...
>
> (P24): Although the art community has written, there are three articles coming out in art journals in the last three months. Which is good and interesting … but probably more interesting is looking through … blogs and stuff that, they're not coming out of the art world, they're coming out this, yeah, they're coming out of the community. And a lot of the sites are … community-based Islamic organisations, sort of interesting…

But sometimes the outside perspective of an art critic provides useful ideas, as described by this practitioner's interview with his exhibition catalogue essay writer:

> (P26): something that ... that came out of our conversation that ... I continue to think about as an idea, because … I like being able to connect what I do to … my situation as an artist living in Sydney … but you know, I'm interested in Western traditions and looking at historical European subjects, as well as other things. So to kind of have someone come in and with fresh eyes, kind of, draw connections between things is sometimes helpful in that respect…

Subcategory 3D: intellectual passions.

Research in a university environment is often perceived as not just a profession but as an integral aspect of life (Lindholm, 2004). As discussed in earlier chapters, Polanyi's "intellectual passions" denotes particular commitments that enable researchers to persevere with working on particular lines of enquiry, even when experiencing "protracted struggles against doubts of its significance and validity" (1962, p. 171). Although personal, these commitments are inevitably intermeshed with communities of practice.

The following comment illustrates the passion that practitioner researchers have for maintaining practice-as-research:

> (P24): my research comes out of art practice. And the way I teach comes out of art practice, so it's always speaking from practice. So it's more intense than just research. It's actually more intense than that…

Experiencing information engagement as following intellectual passions includes developing confidence to take whatever creative paths inspire and excite, as described by this practitioner:

> (P2): understand, as an artist, the power of your own personal excitement…

> (P2): I have students who will get excited by things that I'm not excited by, visually. They'll get excited by ... a Manga animation, they'll get excited by, you know, more and more, by a tattoo work and they'll get excited by … computer game imagery and stuff like that. And a lot of teachers, when they're guiding and assessing that, will tut-tut and go, "That's not art". Whereas I'd say "Make it art". And I'd say, you know, "At the moment it's just that, it's just whatever that was. But it's not you … and it doesn't … push into that extra place that takes us somewhere else. So that's your challenge, is to push it there…

Sometimes intellectual passion involves working with particular mediums, as described by this practitioner:

> (P19): You talk to any painter and it's a bit like people who cook, that they talk about textures and smells and tastes and materials and the best quality of this and that and … that's what interests them. The painting at the end is just something that you have to do

> so you can play with the stuff, really. And that's why, well I find that idea really fascinating, I love the smell of mediums and oil paint and it's just fantastic … and so I guess that's part of … in some ways, the research process, because that's part of the stuff that leads to the finished product…

Intellectual passions might also be fuelled through teaching others, as described by these practitioners:

> (P6): my teaching informs my practice and my practice informs my teaching ... they 'butt heads' quite a lot, in that, I'd love to be making more sometimes, but certainly being able to have that dialogue constantly … I've just been at one of my Honours student's assessment this morning. You know that's a luxury to be able to spend the year ... supervising a student through their own research and their own practice … and watching that develop and … that's a real luxury. That's not work, that's kind of a privilege, in that sense. So, it does help me massively ... and I know again, that if I was alone in my studio, all day everyday, and didn't have this as a stimulation, I don't think I'd be as engaged, but that's just me and … the way I learn…
>
> (P13): I'm teaching … the philosophy behind ... thinking and creating and making. So that is directly applicable to what I'm doing … and I guess you could class this as research too, but … I get these amazing young people coming in with these fantastic ideas and I interact with them almost on a daily basis, so that's kind of feeding me as well ... I go home, you know, feeling like my brain has had a work out at the gym sometimes. But … I'd class that as research too, so all of these experiences are feeding into my own work…
>
> (P17): the important thing about students is that it's never a one-way thing. For me, it's always a two-way thing and I'm still here because of the students…
>
> (P19): so many ideas that are bounced around between a bunch of students and yourself … a lot of the ideas … come from there. Even though … you don't think about it consciously ... something that you see will spark something off. So you're sparking their imaginations and creativity, and they're doing the same for you. A lot of teachers say, you get more out of your students than you give them, and it's really true, it's just the energy and looking at ideas ...

Category 3: structure summary.

Social interaction is the key distinguishing feature of this category. This may be a somewhat passive interaction as in relationships with texts (3A), or introspective interactions with self or with friends and family as described in personal involvement (3B). Community involvement and intellectual passions (3C and 3D) may include broader community interactions that include working with scholarly colleagues, with other social groups whose lives impact on the work, or with exhibition audiences. Examples have been provided that present information engagement as social interaction as in the foreground of focus in this category, but the realisation of the importance of outside input into the research practice is also undoubtedly recognised. To quote one practitioner:

> (P3): if you're in your studio you can, look, there's a nicer way of saying it, but you can basically disappear up your own backside [laughter] because you need stuff to come in, you often hear of artists going off for … there is a time for gathering. And you must take that time…

This need for outside input is therefore in the background of that primary focus on information engagement occurring through social interaction. However, although outside input was valued for the stimulus provided, it was seldom mentioned as being important for purposes of research validation. This is despite external validation, as discussed in previous chapters, being a regular reality for university researchers, often resulting in conflicting priorities, as noted by these practitioners:

> (P6): to be able to fit in with the university's … research focus … I think …you have to be very good at networking, you have to be very good at all those things like, boring things like time management, and making sure that you spend the time on things that are important. And I think, but that's, you see, none of those things make you an interesting artist…

> (P14): the whole idea of an arts practice as … let's think of it as an undisciplined, feral … wayward child that goes in its own direction, we wouldn't be far off the mark. Whereas the rigours of quantification and justification that apply to the sciences, don't fit easily within that mould ...

The requirement for research outcomes to be in some way validated, for institutional or audience or other purposes, is always therefore present, but in the interview data providing evidence for this category, this aspect appears to be in the margin of overall focus. This overall structure, foreground, background and margin, is visually represented in Figure 10.

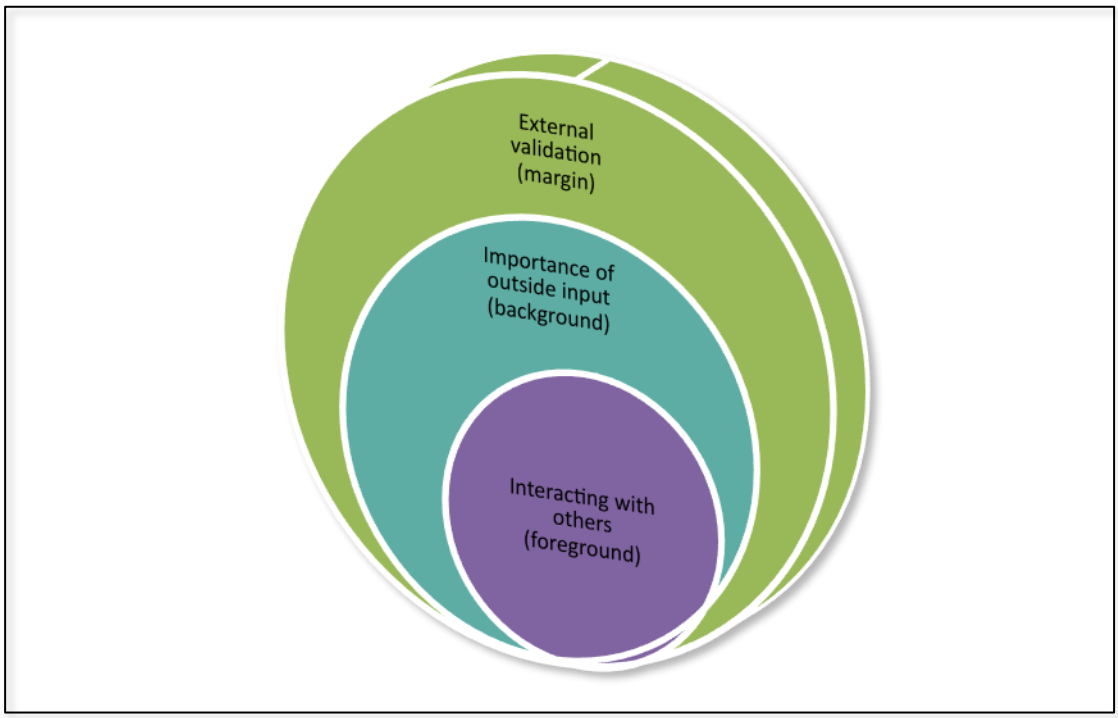

Figure 10 Cat.3. Structure of focus: socially interacting

Category 4: Information Engagement as Altering Perspective

This fourth category involves experiences of information engagement that involve consciously changing the environment in order to change perspective. Evidence for this category appeared in the data in a number of different ways, represented here by two subcategories: physicality (4A) and problematising (4B).

Subcategory 4A: physicality.

The ways of experiencing that fit into this subcategory involve practitioners physically repositioning either themselves or their work as a method of gaining new information. Sometimes the physical repositioning of self occurs via travelling to other places. This has already been discussed in terms of social interactions, but here the intent is different. In this

category the aim of the travel tends not to be for interaction with people but with things, as for example in seeing original artworks or architecture:

> (P22): there've been artists whose work I've seen that has just given me such a lift, and given me such encouragement. And in terms of information and this project … all the work that I'm, near enough eighty per cent of the work that I, I wish it could be a bit more, I've stood in front of the very works that I'm talking about…
>
> (P22): I think it's ... critical because part of my thesis is the experience of being, in that room, with them ...
>
> (P26): It is really instructive, to be able to look at paintings, you know, the great painting collections in museums like the Louvre ... so that you have a sense of the physicality of the painting and you get a deeper understanding of what the painting actually looks like, rather than seeing it in reproduction. So that sort of thing is important ... and also for me I was travelling to access particular sorts of spaces that ... are not available in Australia, like … Versailles and …museums which … there's a number of museums in Paris which are former aristocratic residencies, that are set up with antique furniture and these collections from the nineteenth century ...

Travel can also take the form of pilgrimages to significant places, so as to be informed by the actual experience:

> (P28): the interesting thing about having researched and prepared myself for the pilgrimage was that it … in no way prepared me for the experience…
>
> (P28): that was entirely my experience of Ireland, which was, if I tried to find something, it wasn't there and, but others, something else could pop up and ... you'd really have to work for the things you wanted, you know, it was like you had to prove your commitment to Ireland, before Ireland would reveal itself…
>
> (P2): pilgrimages to your interests are really important … they're not just important in, you know, what you might learn, it's, that's always important, but what you may, may feel, what it may generate. And I think, putting yourself into positions where you don't know exactly, you manipulate it to some point, and you give them a possibility, but then you let what happens happen…

Engaging with information in unfamiliar environments can provide perceptive acuity, as described by these practitioners:

> (P9): I find travel ... far from enjoyable. It's an education, I guess, seeing how different people live … what's important to them and I think it sort of grounds you … I've found … when I first left Australia, many years ago, that I realised, you know, maybe a few years after that even, how sheltered we … can be if we don't leave the country and then get a particular view of how the world is…

> (P13): for example, visiting a city that you've never been in before. You can, you could walk through it, and you can see the architecture, and you could see the people and you could see the culture. But there's this, kind of, boundary between yourself and them. If you do the research prior to entering that city, if you know the city's history … if you've read about their culture, you understand why they do things, and how they do things, then you see it with new eyes. And you sort of become, almost a temporary resident. And … the influences are much more permeable…

Gaining changes in perspective does not always involve distant travel: it can also happen closer to home, for example when moving from city to country:

> (P18): moving to the mountains meant also that there were ... I had this garden, with lots of native birds and things, which was really different from where I was … and so, I started to shift away from the idea of the subject because I found myself making images relating to things like flight and … the new setting I was in…

> (P4): I think I'm very affected by … what's happening around me and the work that I was thinking of, and the way I was working, was with… formerly, bright colours … materials that … emerged from a kind of commercial centre. And going up to the mountains, it's kind of colourless, in that respect…

> (P4): I just couldn't think within that framework anymore…

Sometimes perspective is altered by physically moving made objects. Putting a body of work into an exhibition, for example, allows it to be seen in a different setting, possibly together for the first time, enabling a particular form of engagement:

(P26): you're looking at the body of work together ... and, if it's a solo show, and all the works are resolved, hopefully, and ... so then ... you look at it, but in a different way, it's not so much about how an individual painting is working, it's about how the work relates together and ... sometimes … you can see a development from, between earlier work and … more recent work. And ... so in a, yeah, in that kind of comparative process … that can be quite instructive…

(P22): sometimes it's the only time you see your work set up as you want it to be seen. I have drawings that are, you know, four, five, ten metres long, and [I] see them at two or three metres at a time. So you actually get … a space to see your own work and stand back…

(P22): Because I think when you're making, you just see it as a detail somehow. And it's like seeing the whole thing together ... you can start just seeing things more clearly…

Strategies for gaining fresh perspective might also involve temporary separation from the work in progress. This practitioner for example, puts unfinished work away for short periods, enabling them to be seen again differently, providing new ideas for the best way forward:

(P3): they'll obviously be out of my sight for two weeks. And then when I come back, one by one, I will turn them around and with that moment of fresh eyes, you've got to try and grab it straight away…

(P3): there is definitely a time, whether we're are talking about a long time, or just a short time, to stand back and look at what you're doing so that you can identify what it's telling you…

Subcategory 4B: problematising.

Information engagement through altering perspective is often associated with problematising, both in terms of creating and solving problems. It might involve responding to issues arising through the making process, as described here:

(P15): at the point that I was painting and it wasn't working, you're brain just keeps thinking, even if I'm not painting. I'm just, I'm trying to work out how to fix this problem. So, even when I'd stopped painting, I'm still thinking about it of course. And part of that

> thinking is looking, looking for answers. I'm looking around me for stuff that might provide me with answers…

Problem creation might involve materials used for making:

> (P17): this is the photovoltaic … receptor and ... you can see through the glass, but it also is a solar panel collector that you can feed back to the grid. And so when I saw these, I was thinking, oh my god this is so interesting, because … what happens if you intervene in that design process?

> (P17): as an artist, you're always, like when someone says you can't do that to this material, you say, well I'll give it a try and see if I can…

Many of the problems arising when undertaking practitioner research in a university are related to the ways that this changes the creative practice:

> (P23): the actual process of doing a PhD changed for me … how I actually do research…

> (P23): it changed the work in that it … became not so free and I couldn't produce the work so quickly now…

> (P4): if you're doing a PhD, yes, I think you're there, you've … set yourself a research proposal and … you're required to … develop … a paper and research, you know, written research as well as visual research and that's all got to … come together and … they've got to … support each other … so that …forces you to really … remain with that project until it's completion. I think if I wasn't, hadn't been at uni ... probably … I would've researched the same, it would have been a little bit more micro, I think … the PhD … felt very macro really…

> (P22): I don't want to kind of completely step outside of my general practice because if it wasn't for that, the PhD would be, it would fall apart, that's it. I mean, I'm doing a hybrid PhD, the two have to exist. It's just remembering that the PhD can't be all on your practice, it can't be. You have to take a part of it, because if you've been working for many years, your practice is too broad…

In some ways it can be argued that researching in a university environment is just another form of relocation, undertaken to gain new perspective, as described by this practitioner:

(P20): I think that research and practice is a different thing. Research-led practice, practice-led research or research of practice, puts you in a different mind space to just being in my studio and drawing …

(P20): puts me in ground that's new, and I mean, if I'm researching that's what I should be in. But of course, I would say the artist normally, because the artist, the traditional … genius stuck up in some little room in isolation is that. It's all the internal journey, so it's always here, but it's always within your control … it's not so much creative, because it's all in a controlled space. What happens as a researcher, you have to step outside of that sometimes, put yourself in whole new areas, you know? And test out theories. Test out hypotheses. And so, that's a whole new ball game…

Category 4: structure summary.

Altering perspective is the key distinguishing feature of this category. This may occur through physically relocating self or work as described in the physicality sub-category (4A), or by responding to existing challenges, or creating new ones as described in the problematising sub-category (4B).

In the background of this primary focus on altering perspective is an underlying awareness of a need to disrupt habitual experience occasionally, as is described here:

(P23): I think sometimes we put ourselves … in a particular environment that we hope to get something out of. I mean, I can't actually, I can't remember the last time I went overseas not thinking about some aspect of my practice…

(P27): if you are in a particular habit, you know that lots of things are under your consciousness and … you take it for granted, quite a few things … but if you're exposed to something quite alien, all of a sudden, the same thing you look at differently. Like going to, going outside of your own country for the first time, not only the experience of the new country, but the experience of looking back at your own country and then seeing it for the first time…

Further out on the boundaries of this way of experiencing information engagement is avoidance of creative stasis that can occur if practices become too comfortable, as these practitioners describe:

(P4): I get very bored very quickly and ... I think I don't like the idea of just, I think in terms of that 'comfort-ability' I get afraid of the formula … and I kind of like to keep … because I think formulas spell some kind of death to me, and so I like to keep pushing something beyond what it is and continually … find new angles or try and expand the ideas further…

(P26): if you're too comfortable you've stopped thinking, you've stopped … pushing the process, or the idea, or the whatever it is. There's, there's no, I think … if you're not … stepping out into some area of discomfort, for want of a better term … it just, often you can tell, you can look at an artist's work and you think, you know, there's nothing substantial there in terms of an inquiry and that … yeah, it becomes ... stale and the artist seems almost disinterested … or cynical…

This structure, foreground, background and margin, is visually represented in Figure 11.

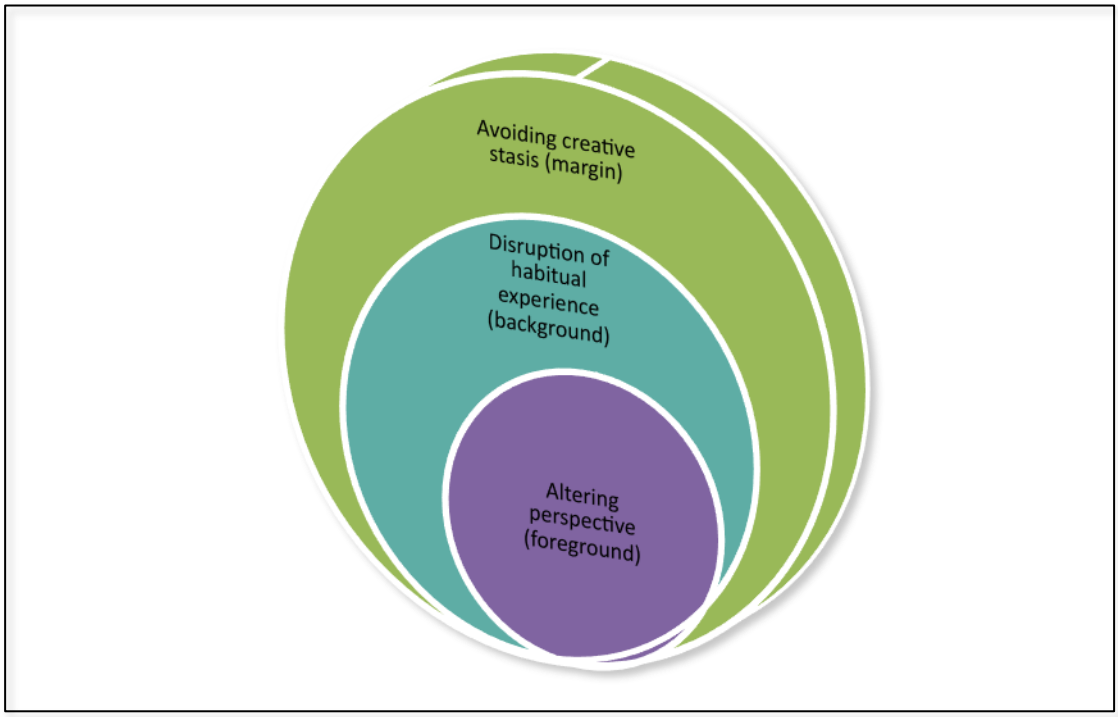

Figure 11 Cat.4. Structure of focus: altering perspective

Category 5: Information Engagement as Experimentation

This fifth category shows experiences of information engagement that involve various ways of trying things out to see what might happen. This experimentation might be an intentional

evaluative process or might equally occur by accident, or as an incidental consequence of various limiting factors. These levels of intentionality are represented here as subcategory 5A (purposeful experimentation) and subcategory 5B (non-purposeful experimentation).

Subcategory 5A: purposeful experimentation.

Information engagement through experimentation mostly happens through forms of material research, finding out by doing. Often this involves informing decisions about how the making will proceed:

> (P22): you can't make these decisions, a lot of these decisions, before. So there isn't that linear thing. You have to do it, find out … but that fact-finding out, that process of finding out, is the work itself, you see. So you can't know it before you've done it…
>
> (P6): I'm not one of those people who has an idea and can visualise it in, visualise it at it's completed stage and then go through the methods of making it. I'm a bit more reliant on the play aspect of the making ...
>
> (P6): I have to … test, see it, go back, reflect on it, go back, test it, go back, reflect on it. So it's like a, it is that classic two steps forward, one step back…
>
> (P19): It's very much researching as you work … you have an idea, a vague idea of what direction you want it to actually go in, but artists' say … you get to a point where the painting starts telling you what it actually wants. And that's kind of true in one way, but I think what it really is, that it's just you're influenced by so many other things…
>
> (P27): as I go along … something clicks and something happens, and I respond to it, and something, it's like a chain reaction. But then, of course, I do not just passively accept that, I nudge myself of course. You know, try it this way, try it that way, and see what happens…

Experimentation may involve different ways of perceiving potential content for art works, for example this practitioner's experimentation with light:

> (P8): I used to have these very large, glass balls on the floor of the studio. And I used to watch what happened with the light hitting this sphere, and reflecting, and refracting.

> And there were, and then I put material in front of them with holes, to get diffraction on the walls, and I would record that…

Sometimes experimentation involves translating ideas from one medium into another:

> (P15): part of my practice is very much about taking different media and applying them to my idea and seeing if that works. And to that extent it then alters, both the idea and the way I go about it as well…

> (P10): the material investigation, or the sampling, is actually incredibly useful because it's amazing how much … visually a piece may be viable, from your drawings and your sketches and … it says whatever you want it to say [but] it's just impossible to make physically and have those things translate…

> (P6): working with things that I have probably never worked with ... just to see what happens. To see if it can feed me any more information about the thinking that I've got, about the particular piece of work I want to make…

> (P3): I've already, kind of … refined all the information before I even get it to the canvas…

> (P3): I now am far, far more experienced at doing that, than what I was in the beginning, I'd be pretty much … I can look now and go, that won't work, that won't work, that won't work, that'll work…

Experimentation might involve fine-tuning ideas:

> (P26): the most helpful thing, I think, is to work. Just make the work in the studio and even if you're a bit vague about what you're trying to do, it's instructive to make work and fail and then you … have a starting point and can say, "Well alright that didn't work so I'm going to do this instead as a response to that". And then … once you've got a breadth of something, it's a beginning of a line of inquiry, which then leads to a research process, which then might lead you to looking at a particular genre, or period in art history, or reading a certain type of material…

> (P22): But, you know, [for] most of us, it's the making, even if it's just to make a little model … making is, making is thinking. And we forget that. *I* forget that sometimes…

(P22): the attempt to try and articulate … is where the excitement is. Whether you get there in the end is sometimes irrelevant. In fact, the trying to make the drawing … perhaps all of the drawing that I've done already is just an attempt to do a drawing that I may do in the future…

Subcategory 5B: non-purposeful experimentation.

Engaging with information by being open to serendipity has been described in subcategory 2A. Although non-purposeful experimentation can be argued to be somewhat similar, it becomes different when serendipitous information triggers an experimentation process:

(P3): I will be painting and I'll step back and I'll realise that something that I have achieved visually is analogous to a theory … or something that I feel, or something that I've been searching for … so the … information … can come…

(P3): if you asked me verbally about that I would probably not be able to respond, or wouldn't, possibly not be able to respond, but when I achieve it visually, either through intent, not clear intellectual intent, but just sort of vague intent, and then when I see it, I go Aha! And I have thoughts on that…

(P4): when I was painting those things I didn't necessarily think that's what I was creating but … when I … looked at them, I thought god …that's quite claustrophobic that image … and then think well, that's how that … in a way, reflects how I felt within that environment out [in the country], like culturally…

Experimentation may be triggered by random changes in materials used:

(P26): in terms of technique, sometimes … a simple process like changing your materials, can generate new ideas, or ... something new in the work. Whether it's an idea, or … something about the use of certain types of materials that can generate associations…

(P19): you're influenced by so many other things and it can be something as simple as you've got an idea for a picture in a particular colour. And when you go to the colour drawer you don't have it. And so you're faced with this choice of either making do with what you've got, or going to the shop and buying one. And that can change the nature of

> what you do, because as soon as you put something else on to it, that you weren't expecting, it changes the nature of the work…

Engaging with information as a process of experimentation may also occur as a consequence of limitations experienced:

> (P14): you adapt your needs to the circumstances and that can very often … infect and inflect the work, for the better. And it's part of being flexible…

> (P26): I was conscious of needing to only work on a small scale so that what I was doing was travel friendly … but that in itself, generated a ... different working process, because I was travelling and that sense fed into my work … I mean, prior to going on the trip I was already interested in a process of composite imaging. Building the image, bit by bit, from various sources, and the fact that I was then [overseas] and working small, but wanting a large image, led to the idea of building an image through … several sheets of paper, slotted together in a grid formation…

Category 5: structure summary.

Experimentation (trying something out to see what happens) is the key distinguishing feature of this category. The "trying" aspect might involve purposeful evaluative processes, or might just be part of the regular process of making. It could be a response to imposed limitations or could simply involve tinkering or playing with material. Essentially this experimentation is the process of bringing ideas to fruition:

> (P6): it's gathering that information in both … in the case of those ones I just gave you, in the data information … but then also, simultaneously, trying to work through the mechanics of it, the practical, applied research. How am I going to … make this thing…

This practical need to interrogate materials and methods to try and articulate ideas can be perceived as conversations between content and process:

> (P1): it was sort of twin poles, there was the subject matter on the one hand, which is external to me, but I wouldn't count that as information, it's more like reality that I'm seeking to apprehend, you know? … and on the other hand, there's … my process. And those two things in conversation, just continue the work forward…

(P17): the work in progress informed what to do next … well, I mean, I started off with this idea … but … you have to have a conversation with the work in progress…

Experimentation can involve both divergent and evaluative thinking (Baer, 2003). Whereas divergent thinking can generate new ideas or content, evaluative thinking occurs when those ideas are brought to fruition through experimentation. This category shows ideas being brought to fruition through processes that are informed by changing and stretching materials and processes. In Category 5 therefore, the focus (foreground) is on experimentation but behind that (in the background) is a need to explore materials and methods (process). The actual content of the ideas is on the margin of this focus. This structure is visually represented in Figure 12.

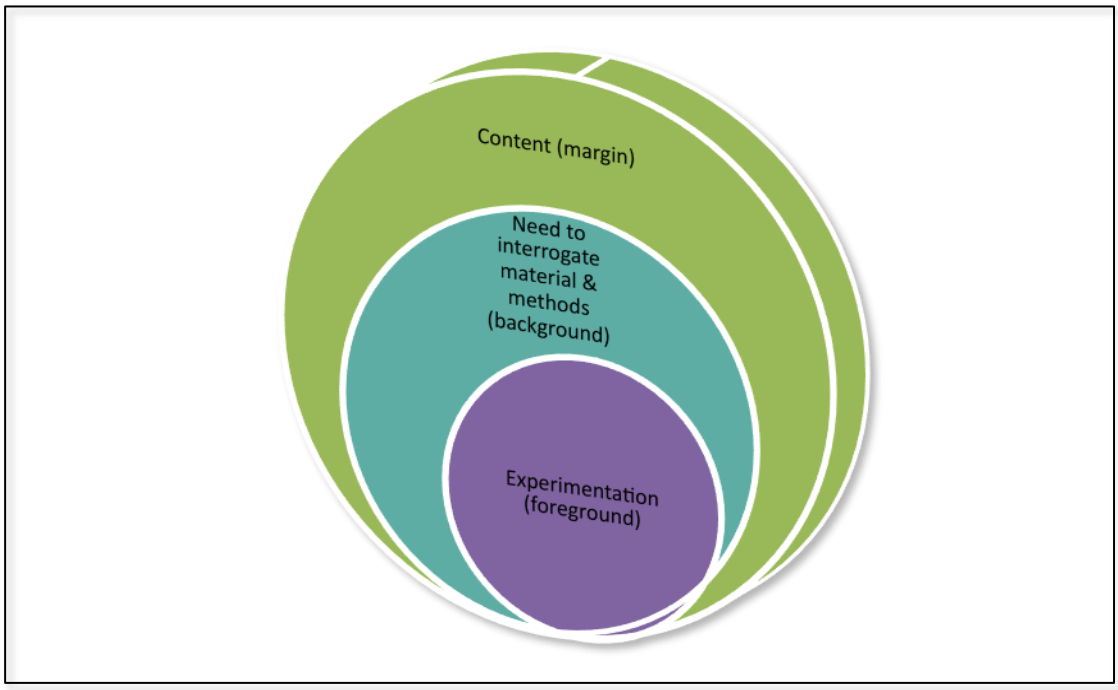

Figure 12 Cat.5. Structure of focus: experimentation

Category 6: Information Engagement as Modifying States of Mind

Considerable research supports mood states as enhancing creativity. This can be positive (e.g., Hirt, Devers, & McCrea, 2008; Pannells & Claxton, 2008) and also negative (e.g. Akinola & Mendes, 2008; Gasper, 2003) mood states. Practitioner researchers' practical experience of creativity enhancement may explain why information engagement often occurs for the

purpose of altering mood. This appears in the data in two slightly different ways, involving either the removal of information to "zone out of" or the addition of information to "zone in to" particular states of mind. Both of these ways of experiencing appear to be consistent with the purposeful development of a state of "flow" (Csikszentmihalyi, 1991, p. 3) to optimise creative ability. As Csikszentmihalyi points out, "optimal experience is … something that we *make* happen" (original italics) (p. 3).

Subcategory 6A: zoning out.

Zoning out of intellectual reasoning during actual task operation occurs within many activities. In this study, the type of information used for the purpose of zoning out was usually unrelated to the actual content of the research: this engagement was intended to distract the mind, to limit "over-thinking" the work. For practitioners working in information-rich, university environments, this ability can be crucial for creative success:

> (P14): it's developing a healthy relationship between bodies of information, wherever they might reside, and understanding what is most useful for the act of making art and what can, at certain times, be a potential hindrance ...

Being able to create a "flow" environment often enables results that practitioner have not thought themselves capable of:

> (P8): an artist can be at a certain point of knowledge in their work and then they transcend into another zone to complete something in such away that, when the artist goes back the next morning and sees the work, they think, "I don't remember doing that, wow, wow, I bet I can't do that again"…

Although every practitioner will have particular ways of zoning out, common strategies involve music:

> (P16): I play music and I have a bit of a PJ Harvey obsession and so I will listen to her and sometimes I'll just listen to one CD all day and it will get me into a rhythm … and it's almost a bit like self hypnosis ...

This practitioner also sometimes watches daytime television as she works. Very occasionally this provides creative ideation (e.g. from a program featuring ice sculptures that stimulated ideas about using a freezing process), but for the most part it is for distraction:

> (P16): I've got certain marks that I know are my marks and whether they're a photographic mark, or a mark I'm making with a pencil, or with thread, they're my marks … I suppose in some ways, there's all this thing about … sometimes you have to stop thinking, to actually let that come through. It is that thing about your hands have learned and sometimes the distraction of having something to look at, or something to listen to, allows you to go into that…

Subcategory 6B: zoning in.

Although zoning out requires engaging with information as a distraction, zoning in requires information that enriches the working environment, to bring it closer to experiences that practitioners want to recreate through their artwork:

> (P2): in the studio situation, it's more about finding something that has … rhythm … the appropriate rhythm and the appropriate general mood … because I try and act the feeling of the work that I'm going to do, as much as possible…

> (P2): it gets hard to explain, but that, that feeling of that stimulus, how that made you feel … how, what I use a lot is … trying to channel a feeling and … if I'm drawing something that I want to give that kind of uncertain fear about … I … think about those sort of things, think about what I think of how a medieval person would have considered that ... that they would have been … heretics being killed…

Creating a particular environment may include listening to types of recordings: for example, religious chanting used by this practitioner to help explore how these contribute to the creation of sacred space:

> (P21): I also listen to them while I'm drawing. I take them, one particular piece from the … Tibetan Buddhist chanting and … the processes of trying to get the right mark, and trying to come up with a composition and a structure for that was done through … listening to it repeatedly…

Sometimes information originally used for zoning in is later used for zoning out. For example, one practitioner originally augmented her research of a particular historical period by playing music from that time as she worked in her studio, a successful practice that continued after the research completion:

> (P8): I think it's subliminal information, well … I know immediately I relax once that music is [playing]. I have a ritual, where the music, I choose the music and usually the music of that era is what sustains me, throughout the whole body, or a series of works ...
>
> (P8): I start listening to it at the beginning, but after a little while I don't hear it. But it has, I'm in accord. And when I finish my work, usually the tape is off … but I'm still in that rhythm…

Category 6: structure summary.

Modifying states of mind is the key distinguishing feature of this category. This is in the foreground of focus as practitioners engage with information to zone into or out of particular mental modes whilst creating their work. Behind this primary focus is a tacit awareness of particular mood states that have previously led to successful making, and re-creation of these has become absorbed into preparations for creative work. On the margins of these experiences lies an awareness of needing to balance thought and action, a factor particularly true for creative practitioners in universities who arguably face more unbalancing factors (e.g. competing expectations) than those outside academia. For example, some practitioners mentioned warnings received:

> (P25): when I told people before that I was doing my PhD, they would say, Oh what are you doing there, don't do that, you will ruin your art…
>
> (P27): I've been warned by quite a few people that if you do a PhD from School of Art or a PhD for any practising artist, it's going to … confine you and then you start illustrating your theory with your practice, or something like that. Of course, I didn't want that to happen…

Even for experienced practitioners, the concern for avoiding potential damage to a creative practice that might occur if thought and action are unbalanced always hovers at the margins of the focus. This structure has been visually represented in Figure 13.

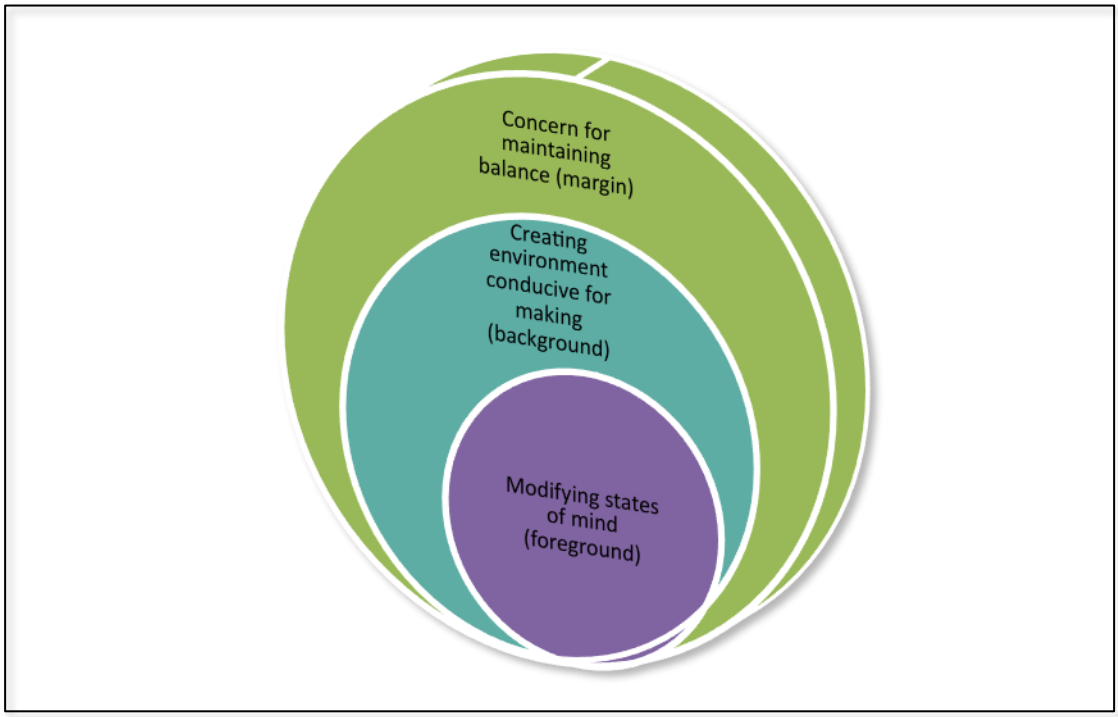

Figure 13 Cat.6. Structure of focus: modifying states of mind

Although books and other texts represent significant information sources for many practitioners, these six qualitatively different ways of experiencing information engagement show "information" extending well beyond traditional ideas of words illustrated by images (or images described by words). Text-based information arises most frequently when practitioners are experiencing information engagement as building infrastructure, but this engagement may also involve gaining information through the processes of learning new software, or whilst practicing foundational skills that are important for ongoing skill enhancement. Within that experience of building infrastructure, information may also be manifested in various structures that are created to manage ideas, image collections, records of completed work, or other types of archive that continue to inform. These are more than just methods of keeping information at hand: the collections themselves become integrated information sources, sometimes evolving into art works in and of themselves. Information sources commonly used by practitioners creating personal narratives include viewing, reading and talking about the work of significant people, learning about their lives, visiting places these people have been to, or their work has been displayed, or where they have made some significant impact. Creating

particular personae (e.g. for performance art) includes studying the body language, mannerisms, and daily lives of selected groups of people in both virtual and real communities.

Experiencing information engagement as making connections involves being open to information arising anywhere and at any time. This information sometimes comes through experiencing popular culture (TV, films, street advertising, etc.) or from other objects or events encountered during day-to-day activities such as walking down the street or driving home from work. This way of experiencing information engagement also involves information gained through the processes of creating, particularly through making choices (between tools, materials, or subjects, etc.) that allow for connections suddenly to be realised. Because the recognition of connections usually involves the tacit integration of many different particulars, it is usually impossible to identify all the various information sources that have led to specific realisations. An ability to perceive the world in multidimensional ways is also often at play when experiencing information engagement as making connections. This may result from a wide range of subject interests, or from a purposefully learned habit of seeking differing dimensions of particular phenomena.

Information engagement experienced as socially interacting involves information gained from people, present, past or both (especially when discussing historical works with colleagues in present time). This can involve collective relationships with texts through book discussion groups, listening to book reviews on the radio, or through talking to people within the wider community. Experiencing information engagement as socially interacting may also involve gaining personal information from family and friends, or from sites of personal significance. Acts of caring for friends and family, through both good times and bad, often involve information generation. This is particularly true in those instances whereby such activities trigger individuals to explore, and to clarify, their own fundamental beliefs. Communities are another important information source, as for example when information arises through networking with university colleagues, research partners and supervisors, and other communities associated with specific research interests. Formal or informal information may be gained from participation in conferences or scholarly projects, or through interactions with political groups working towards the amelioration of certain social issues. Information also arises when practitioners undertake various forms of negotiation to enable work to be created. This may involve gaining access to important places or people, or negotiating the terms of commissioned work. Information can also arise as a consequence of various types of

interactions with audiences attending exhibitions, or viewing, or using completed work. This is often used to inform the planning and creation of subsequent work.

Experiencing information engagement as altering perspective can involve information generated from changing the physical location of the work or of the self. Some practitioners talked about putting uncompleted work aside for some time, waiting to see if this separation can generate new information when the work is viewed again. Information also often arises when individual works are assembled together for the first time, or are viewed in ideal environments, as for example when exhibitions are mounted. In these cases, changed perspectives of the work create new sources of information. Information arising from physical relocation of self may come about through travelling overseas, the information perhaps serendipitously appearing during holidays, or through more purposeful pilgrimages to significant places. Less distant position changing can occur when practitioners relocate to new homes or studios, thereby gaining information from sometimes radically different surroundings. In these cases it is the changed physical location of the artist or designer that triggers information engagement being experienced as altering perspective.

Information engagement experienced as altering perspective may equally arise from problematising. This may be when practitioners respond to unanticipated difficulties that arise as works are being created, and often involves looking for and engaging with information to provide solutions. It could also involve practitioners purposefully creating problems so that innovative solutions can contribute to the creative processes generally. Altering perspective may also occur through challenging norms, for example using material for purposes that have previously seemed impossible and gaining information from that process. Sometimes solutions are found through information generated by the work processes themselves, and at other times through encounters with external factors.

Experiencing information engagement as experimentation can involve purposeful processes of sampling and testing of material and techniques, or non-purposeful activities that respond to accidental occurrences. Purposeful experimentation often generates information through working with material processes (for example when P10 describes working with metal to create textures, or patinas that create a desired effect), but can also involve experimenting with subject content, (as for example when P8 experimented with reflections of the sun from mirror balls so as to recreate this in drawings). Non-purposeful experimentation can occur when, for some reason, practitioners deviate from regular processes thereby creating “happy

accidents" which generate new information that leads to new understanding. Happy accidents can equally occur as a consequence of just "playing around" without any particular end-point in mind.

When practitioners experienced information engagement as modifying states of mind, this occurred by either zoning out, or zoning in, to particular feelings or sensations. Zoning out involved information as a distraction, often music or radio programs playing in the background, or sometimes, daytime television shows. Zoning in often also involved music, but rather than for distraction, this was intended to create (or recreate) certain moods or feelings that were integral to the work being produced. Examples include P2 creating feelings of irritation by listening to music that annoyed, or P21 creating feelings of calmness, and finding connections with calligraphy, by listening to the chanting of Buddhist monks. Although practitioners most regularly used some type of sound when experiencing information engagement as modifying their state of mind, the types and intensity of those sounds were idiosyncratic to both the individual and the work being created.

The examples presented in this study show practitioners explicitly and tacitly informing their research with a widely diverse range of text and non-text information. In the introduction, information engagement is defined as involving any *thing* or *process* that informs, and this study shows information generated through bodily practices, through the manipulation of materials, through emotions, passions, and other feelings, through interactions with others, and through various forms of engagement with external content. The diversity of information sources that can inform practitioner research is probably inexhaustible and, depending on circumstances, the same information source may be experienced in more than one of these different ways. Given this potentially inexhaustible diversity, this study highlights information arising either through engagement with external content or through the processes of making itself. Although all six ways of experiencing information engagement discussed in this thesis involve information arising from both of these, some are more likely to involve one over the other. The density of this involvement (in content or process) is presented in the following discussion of the outcome space.

The Outcome Space

Phenomenographic analysis aims to identify qualitatively different ways that a particular phenomenon may be experienced. Analysis results have been presented so far as different

ways of experiencing, as described by participants, and by categories that were gleaned from those. The outcome space provides a broader perspective that allows consideration of relationships between the categories, allowing a more holistic view. In many phenomenographic studies the outcome space is structured hierarchically, so that less complex categories are encompassed by more complex categories; but as already explained that has not occurred in this study. However, whether hierarchical or not, the outcome space ideally represents all possible ways a phenomenon might be experienced by a particular population (i.e. as represented by the study participants), at a particular point in time (Akerlind, 2005d). This claim is obviously tempered by the caveat that understanding can only ever be partial (Marton & Booth, 1997) but given that, the following outcome space aims to represent all the ways that art or design practitioner researchers might experience information engagement whilst informing their research.

The first and most obvious relationship between the categories (illustrated in Figure 7) comes from common links to the phenomenon under consideration, i.e., all categories involve engaging with information for the purposes of practitioner research. The second relationship between the categories comes from links within thematic threads—that is, informing either through content or through process—and these threads are interwoven, in varying densities, within all the experiences of information engagement that were described by participants. Clearly practitioner research requires the coexistence of both, because research needs content and practice needs process, but some categories include more of one than the other. For example, process appears marginally in the *building infrastructure* category and content appears marginally in the *experimentation* category. That density of focus, on content or process, will be affected by whatever was happening for the participants at the time of the interviews, in particular the type of work being undertaken, the stages of any given project (beginning, middle, etc.) and the nature of the research undertaken. This does not imply that any one category encompasses more complex engagement than another, but recognises that individual practitioner motivations or purposes will cause shifts in focus, back and forth, between engagement with content or with process.

These motivating actions create a third set of relationships between the categories, which create porous boundaries between each variation. To give two examples, *building infrastructure* is motivated by something beginning. In the case of university researchers who have built infrastructures of knowledge and skills over many years, new beginnings might occur when their research changes, perhaps in new mediums or disciplines, or in different

phases of research. The motivating actions are related to preparation, or to maintaining and updating and—in this study at least—the thematic density leans towards being mainly concerned with engagement with content. By comparison, *making connections* is qualitatively more dynamic and opportunistic, occurring at any time. Perhaps connections happen after domain knowledge has been built, as suggested by creativity researchers (e.g. Halpern, 2003), but ideas about connections could also easily be the impetus to build knowledge of other domains, especially when incorporating new content into their work. Motivations are related to being open to serendipity, and looking for multidimensional perspectives. This neutrality shows process or content has equal potential, so thematic density is more evenly balanced. These interrelationships (Table 13) create a connective web that encompasses the outcome space and illustrates qualitative differences between each of the categories.

Outcome space summary.

This outcome space presents experiences of information engagement within six different categories of description. Although not perceived as structurally hierarchical, this outcome space shows a porous web of interconnections between these otherwise different ways that art and design practitioner researchers experience information engagement.

For those endeavouring to assist novice practitioner researchers with the processes of engaging with information during research, this outcome space provides evidence to inform developmental strategies and content. The next chapter will discuss the possible implications that these findings have for practice.

Table 13 Outcome space showing qualitative differences between categories

Category	Meaning structure	Motivating action	Experienced as	Thematic density	Sample excerpts
Building infrastructure	Building foundational content (foreground) Building identity (background) Accumulating skills (margin)	Preparing Updating Maintaining	Building foundations Creating structure Forming narratives	Predominantly content	(P1) - it's a craft that is a slowly built thing… (P7) - age and experience has benefits … because you've got a storeroom of knowledge in your brain…
Making connections	Increasing potential for connections (foreground) Past successes (background) Structured processes (margin)	Pattern seeking or recognition Conceptual association	Openness to serendipity Tacit integration Multidimensionality	Mixed content and process	(P17) - You never switch off from art practice. It's always in your head… (P16) - I find there is amazing synchronicity…
Socially interacting	Interaction with others (foreground) Need for outside input (background) External validation (margin)	Negotiating Collaborating Communicating Assisting Becoming involved Getting feedback	Relationships with texts Personal involvement Community involvement Intellectual passions	Mixed content and process	(P13) - the best ... channels open when I can just sit and talk with people. And you talk about issues or you talk about ideas…
Altering perspective	Altering perspective (foreground) Disruption of habitual experience (background) Avoiding creative stasis (margin)	Asking "what if?" questions Repositioning self Repositioning work Temporary separation of self from work	Physicality Problematising	Mixed content and process	(P2) - pilgrimages to your interests are really important… (P20) – [research] puts me in ground that's new…
Experimentation	Experimentation (foreground) Need to interrogate materials and methods (background) Content (margin)	Testing Stretching material possibilities Fine-tuning Playing with surprise occurrences	Purposeful experiments Non-purposeful experiments	Predominantly process	(P27) - something clicks and something happens, and I respond to it… (P22) - making is thinking…
Modifying states of mind	Modifying states of mind (foreground) Environs conducive for making (background) Maintaining balance (margin)	Distracting the mind Creating a "flow" state Stimulating and/or simulating feelings	Zoning out Zoning in	Mixed content and process	(P16) - it will get me into a rhythm … and it's almost a bit like self hypnosis ... (P2) - what I use a lot is … trying to channel a feeling…

Chapter 6:
Discussion

This research was initiated to explore the ways that university-based art and design practitioner researchers experience information engagement during their research, anticipating that any new understanding could later be applied to developmental opportunities for novice practitioner researchers. Chapter 1 began by exploring various social and political influences on research undertaken within universities today, using a relational approach to consider particular contexts within which research activities occur. In particular, that chapter discussed the considerable impact that global neoliberal reform (often described in Australia as economic rationalism, Sheehy, 2010), is having on universities throughout the Western world. These reforms ushered in significant social changes that included the privatisation of many public services and, in particular, accelerated the corporatisation and global marketing of higher education. In the last few decades this repositioning has led to predominantly English-speaking governments around the world moving "higher education systems closer to the forms of textbook economic markets" (Marginson, 2013, p. 353). It has also created an increasing shift away from higher education being perceived—at national, community and individual levels—as a desirable "public good" that has flow-on benefits for all of society, towards being narrowly perceived as a "consumer commodity" (Simon, 2011, p. 10) that is purchased for individual gain. An understanding of these wider impacts allows this study to position information engagement activities within a particular milieu as advised by Lloyd, who argues that every context contains "particular historical, social, cultural, political and economic arrangements that in turn shape, enable or constrain the practices within them" (2010, p. 153).

Chapter 2 discussed the higher education reform that led to Australian colleges and universities becoming blended within a National Unified System of higher education, and in particular to art and design colleges becoming university faculties. The upheaval resulting from these changes created challenges for artists and designers as they sought ways to resolve differences between their prior research practices and the rather different requirements and expectations of universities. Chapter 2 shows that practitioner researchers generally responded productively to the challenges, but that this involved considerable reflection and discussion about the nature of creative art and design as research, leading ultimately to other

changes in the ways that art and design practitioner research is practised and to the field of university research generally.

To contextualise this study on information engagement for research, Chapter 3 discussed previous investigations into the information use of artists and designers. This revealed that whilst information needs and seeking preferences of artists and designers had been widely explored, how they engaged with that information had been largely overlooked. Significantly, this inquiry maps this unexplored area. Chapter 3 also considered the development of information literacy, in particular how professional standards such as the ANZIL Framework (Bundy, 2004) have led to information literacy being closely associated with generic competencies. The strength of that association has often caused information literacy to be almost exclusively identified as a set of competencies, despite the competency approach being only one of at least six potential ways of developing information literacy (Bruce, 2008). This study is interested in the potentiality of moving beyond the ANZIL framework to more appropriately meet the developmental needs of practitioner researchers like artists and designers. Chapter 3 also discussed interconnections between information engagement practices, the relevance of tacit knowing for information engagement within the visual arts, and how tacit knowing might be made more explicit.

Chapter 4 discussed the considerably narrower context associated with the practicalities of this study, which made use of phenomenographic data gathering and analysis to gain insight into the ways that 28 art/design practitioner researchers engaged with information whilst undertaking university research. Outcomes from that analysis were presented in Chapter 5, and six, newly identified, ways of experiencing information engagement revealed multi-layered and complex activities that are enacted both personally and socially. In effect, the outcomes of this study indicate that information engagement is an enabling process and a form of thinking that frequently functions beneath or alongside the more outwardly obvious processes of creating artefacts or performances. By taking a relational perspective, the wider influence of the university as a contextual site of practitioner research was also explored. This enabled the outcomes to show a particular type of information engagement occurring within the university environment. Consideration of the localised practices of art and design practitioner researchers has enabled the development of a new suite of ways to develop information literacy at the tertiary level.

This final chapter discusses the outcomes of this study through a comparison with previous research and also by considering potential applications. Throughout this discussion references to this study's newly defined ways of experiencing information engagement are italicised: for example, experiencing information engagement as building infrastructure will be shown as *building infrastructure.*

The first section of this chapter connects this study with the past by making comparisons with the outcomes of previous studies. Although the relational approach of this study is quite different to methods used by previous researchers, useful comparisons can be made with some of the outcomes from four of the studies reviewed in Chapter 3. The second section of this chapter considers potential applications for the findings of this study, beginning with possible uses for librarians and others interested in the development of information literacy for artists and designers. By comparing these outcomes with the ANZIL standards—a tool familiar to most Australasian librarians—this second section shows these findings sometimes overlapping, but also extending beyond that familiar framework. To further emphasise practical applications for librarians, the third section of this chapter shows how these outcomes can successfully ameliorate problems reported by art librarians responding to Mayer's (2010) survey into information literacy programs for studio learning.

Because a relational approach encompasses consideration of relationships between wider contexts and activities functioning within them, there is increased potential for applying these study outcomes to learning situations beyond information literacy development. The fourth section of this chapter illustrates this by discussing practical ways that these outcomes could be used by curriculum developers seeking opportunities for earlier involvement of art and design students in university research. A fifth section discusses potential applications for course administrators seeking to provide evidence of graduate attribute development. In particular, this fifth section points to interconnections between the development of information engagement abilities and attributes associated with independent research and self-directed practice. This is followed by a short exploration of possible ways that future research could build on these findings.

Comparisons with Previous Studies

This research aims to fill a perceived gap in the literature concerning the information use of artists and designers by focusing specifically on how information engagement is experienced

by practitioner researchers as they inform their university research. As Chapter 3 shows, most previous studies have focused on types of information or on information-seeking, but studies by Cobbledick (1996) and Cowan (2004), whilst not specifically looking at information use, produced outcomes that can be compared with those of this inquiry. Additionally, because studies by McLaughlin (2008) and Medaille (2010) considered information-seeking *and* information use, their results can also be compared with this study. Each of these four studies utilised interviews to gather data, with three focusing on visual artists and one (Medaille) on theatre artists. Like most of the authors considered in Chapter 3, these four investigators were all librarians.

Susie Cobbledick (1996)

Cobbledick's interviews with four artists working in university contexts influenced her conviction that "the information needs of artists are too diverse to be addressed solely within the confines of art librarianship" because "art reflects [all] human experience" (p. 365). Certainly the complexity and diversity of the information engagement described by practitioner researchers in this study provides evidence to support that. Although the primary aim of Cobbledick's study is to investigate information sources, her findings that a "conspicuous extralibrary source is people" (p. 363) is in keeping with this study's finding of information engagement experienced as *socially interacting*. Although the experiences described in this study as *socially interacting* encompass a much broader range of practices than Cobbledick's examples of interpersonal relationships and relationships with technical experts, her emphasis on social interaction links the outcomes of this study with hers.

Sandra Cowan (2004)

Cowan's research study was influenced by her curiosity "about what informs an artist's creative work" (p. 17). Cowan interviewed an artist who had been a personal friend for some years and with whom she had once shared studio workspace. Outcomes from her research show creative work being informed by the natural environment, by the art itself, either by relationships with the work and with others, through self-inquiry (reflection of self) or by being generally attentive to the surrounding world. In a number of different ways the outcomes of this study are similar to those presented by Cowan. For example, Cowan's description of the interviewed artist using the landscape to provide "inspiration and ideas, but also … colors and visual patterns that she translates directly into her work"(p. 17), resembles information

engagement experienced as *making connections,* such as the serendipitous possibility described by (P17) of "seeing a pelican standing on a light and suddenly making a connection with something that's in the studio on the floor". Cowan's example of work being informed by the art itself, and in particular from "sensory information … from the work in progress, and … interaction with the materials she uses" (p. 17) is similar to information engagement experienced in this study as *experimentation*. An example from this study is (P27), who experiences the informing of her work "as I go along … something clicks and something happens, and I respond to it, and … it's like a chain reaction. " Like Cobbledick, Cowan refers to information being sourced from social relationships that are similar to information engagement being experienced as *socially interacting:* but Cowan's outcomes are more similar to this study than were Cobbledick's, particularly in the sense of these relationships including interactions with people both living and dead, through "reading the writings or viewing the work of famous artists" (p. 18). This can be likened to comments in this study such as that of (P4), who said that "for me reading is a really important part of the process too ... I think reading can really influence the direction and the content of your work".

Cowan's description of the interviewed artist's belief that "what is important to know does not come from outer, authoritative sources, but from paying attention to her own experience and her own internal processes" (p. 18) comes close to comments made by participants of this study experiencing information engagement as *modifying states of mind*, like (P2) who talked about "zoning in" to particular experiences with the comment, "it gets hard to explain, but that, that feeling of that stimulus, how that made you feel … what I use a lot is … trying to channel a feeling".

Perhaps as a consequence of her interviewed artist's extensive experience, Cowan rarely mentions activities that might be likened to experiencing information engagement as *building infrastructure*. She does, however, mention the use her artist made of structuring devices: for example, "two of the key objects that she uses in her work: her sketchbook (in which she sketches, keeps notes, and writes) and her color strips (visual records of the colors she uses and creates)" (p. 18). These examples show that although Cowan's artist might have already built the foundational knowledge she needed, some aspects of her information use is consistent with the participants in this study who experienced information engagement as creating structure. Cowan does not mention any information activities that can be likened to information engagement being experienced as *altering perspective*. Unlike the practitioner researchers in this study, Cowan's artist did not appear to use problematising or physical

movement of her work to look for new information. Cowan remarks that her artist "does not conceive of her work or her creative process in terms of problem, neither as problem-creation, nor as a lack that is fulfilled" (p. 18). This difference can perhaps be explained by the fact that Cowan's artist worked outside the type of university environment described in this study by (P4) as being "a community … of people who are also engaged with research and ideas … [that] offers you an opportunity to be challenged". Not being involved in academic research perhaps means that Cowan's artist had less desire, or opportunity, for that type of challenge. It should also be noted that the outcomes of this present study represent collective descriptions of the experiences of 28 different practitioner researchers, whereas Cowan's study considers the experience of a single practitioner.

Jodi McClaughlin (2008)

Unlike Cobbledick and Cowan, McLaughlin's (2008) study aims to explore not only the information sources of visual artists but also their use in practice. Analysis of the data from interviews with 15 professional artists led McLaughlin to describe artists informing their work through both active and passive engagement with people, places, objects and the self. McLaughlin describes information activities that can be likened to many of the categories of experience in this study. For example, her statement that "many of the artists interviewed noted they engaged in conversations with a variety of people while preparing, researching and/or producing an art object" (p. 41) aligns with information engagement being experienced as *socially interacting.* McLaughlin's statement that "some of the artists considered certain physical locations as information sources" and her mention of such places as artist studios, physical environments, installation sites or gallery spaces, loosely aligns with descriptions of information engagement being experienced in this study as *altering perspective*.

When talking about artists being informed by "objects", McLaughlin's examples are texts such as books and journals, radio interviews, Internet sites, works of art, and objects seen in the environment such as debris from a derelict wharf (p. 52). Unlike "people" and "places", McLaughlin's "objects" are harder to align with any one particular category of experience described in this study. The use of texts, radio interviews, the Internet, and works of art may be aligned with experiencing information engagement as *socially interacting*, but engagement with objects such as wharf debris would be more aligned with *making connections*. For McLaughlin, being informed by "objects" includes instances whereby artists created their own

materials, such as “paper, audio, and film” (p. 61); such activity might be more like information engagement experienced as *experimentation*.

McLaughlin views the artist’s “self” as an information source in those instances when art works are informed by personal experiences, social and cultural values and personal interests (p. 53). She interprets this source as being primarily sensory in that “the senses act as a conduit between the internal information stored in short and long term memory and the external information that is evident in the physical world” (p. 54). Examples of the information content within McLaughlin’s “self” as source is again too wide to align with any one category of experience described in this study. However, her emphasis on sensory information, in particular one participant’s description of how she “felt, touched, and smelled the rural area she lived in to fully capture its essence” (p. 54) is somewhat like information engagement experienced as *modifying states of mind*, wherein particular experiences are “zoned in to” during the making of a work.

McLaughlin’s two “patterns” of information use (active or passive) may be perceived as similar to the two “themes” within this study whereby information engagement is experienced through either content or process; but her description of information use as “active” and “passive” actually denotes a marked difference. That difference comes from this study’s primary focus on engagement, and the *act* of engagement is by its very nature *always* active. Even those instances whereby information is not purposefully sought and is encountered serendipitously, engagement with information is still active. Although involving various levels of activity, (for example engagement with ideas whilst reading a book, might be perceived as less active than discussing those ideas with others), engagement always involves some action. Although McLaughlin talks about information “use” (as opposed to engagement), her use of the word “passive” ignores the sometimes underlying, but still active process of “tacit integration”, as discussed in Chapter 3, that enables serendipitous encounters to be connected with ideas. Therefore, although in some sense similar, the concept of information being used “passively” denotes an important difference between McLaughlin’s research findings and those of this study.

Ann Medaille (2010)

Medaille’s findings from her investigation of the information behaviour of theatre artists share some similarity with those of this study. Like McLaughlin (2008), Medaille’s investigation

extends beyond information sources and seeking preferences to consider information use in practice. In common with all three previous studies, Medaille's respondents use information in ways consistent with experiencing information engagement as *socially interacting*. This interaction includes conversations with personal/professional connections and with members of the public, so as to improve understanding of characters or situations being represented in theatre productions. Probably as a consequence of theatre productions needing to come together in relatively short timeframes, Medaille's participants also talk more about cooperative information sharing strategies than was evident in the interviews for this study.

Medaille reports an artist using "sources such as art or music that call forth a feeling for a period or style" (p. 338), which is somewhat similar to information engagement experienced as *modifying states of mind* for the purposes of stimulating or recreating particular emotions or feelings. In ways echoing information engagement experienced as *making connections*, Medaille also describes information-seeking and discovery processes that enable theatre artists "to make unique connections between their own experiences and newly discovered information" (p. 344). Also in ways comparable to this study, she finds information gathering to be interspersed throughout the production of creative work, "occurring heavily early on in the process but being practiced all the way up until the opening performance" (p. 345). A comment by one of Medaille's artists about important information provided by audience responses such as, "who's sleeping, who's not paying attention, who's laughing hysterically, who's in tears" (p. 334) suggests a link with participants of this study who still gained information from audience interactions with their work, some time after the first performance, or presentation.

Although all but one (Cobbledick, 1995) of these four research studies focuses on practitioners working in the community—as opposed to universities—each produces outcomes similar to the categories of experiencing information engagement described in this study. This study does however present two key differences, the first being the relational approach used to identify opportunities and constraints presented by the specific social and political context of the Australian higher education sector within which practitioner researchers work. The second difference involves the specific focus—through a phenomenographic approach—on qualitatively different ways that practitioner researchers *experience* information. In these important ways, this study provides alternative perspectives that expand existing understandings of how artists and designers experience information engagement.

Other phenomenographic studies.

Although the ways that art and design practitioner researchers engage with information have not previously been investigated via a phenomenographic approach, the outcomes of two information literacy studies (Abdi, Partridge & Bruce, 2013; Lupton, 2008), both utilising phenomenography, can be compared with this study in some ways. Lupton's (2008) investigation of information literacy and learning is applicable because her participant population includes music composition students who are working towards becoming creative practitioners. When describing experiences of information use, these students talked about information gained through experimentation and also about the ways that the emerging work itself provided information. This is obviously similar to practitioner researchers experiencing information engagement as *experimentation*. Other similarities arise when the music students talked about creative development enabling them to build identities as composers. This is like the practitioner researchers in this study experiencing information engagement as *building foundations*, particularly within the sub-category 1C (*forming narratives*). Lupton also refers to the music students gaining information from feelings and moods generated by the sounds they were creating, which can be likened to the practitioner researchers in this study experiencing information engagement as *modifying states of mind*.

The second comparative study (Abdi, Partridge & Bruce, 2013) reports preliminary findings from a larger, ongoing exploration into the experience of information literacy by website designers. This initial study into the practices of four participants finds effective information use being experienced "as building a knowledge base" (p. 46), which is similar to the participants of this study experiencing information engagement as *building infrastructure*. Effective information use is also described as being experienced through participation in a "learning community of practice" (p. 47), in ways similar to practitioner researchers in this study experiencing information engagement as *socially interacting*, especially as described in sub-category 3C (*community involvement).* Similarity also arises when website designers are described as experiencing effective information use as problem solving. This resembles the experiences of art and design practitioner researchers experiencing information engagement as *altering perspective,* especially in sub-category 4B (*problematising*).

Whilst the different emphases of each of these phenomenographic studies impede exact comparisons, all investigate the practices of creative participants (music students, website designers, art and design practitioner researchers) in terms of information use. These common

factors, combined with the described overlaps in findings, provide partial validation for the outcomes of all three studies.

Situating Outcomes with Information Literacy for Art and Design Students

By exploring the ways that skilled art and design practitioner researchers experience information engagement whilst informing their research, this study contributes to the work of librarians—and others—who aim to facilitate the effective use of information by novice practitioner researchers. In general, librarians use at least three modes to facilitate information use: answering queries at information help points; offering customised assistance for researchers undertaking specific projects; and teaching students to effectively engage with information throughout their degrees, in effect, through the development of information literacy. In the first two instances, a clear understanding of the specific ways that artists and designers experience information engagement in research contexts is likely to facilitate more effective interpretation of requests and inform the content of answers provided. For example, a person seeking to engage with information to build foundational knowledge may require different types of assistance from a person seeking to browse information to allow previously undiscovered connections to emerge. In recommending a subject database to either of these types of enquirers, librarians might suggest quite different modes of locating information. When providing customised assistance for specific research projects, knowledge about how researchers might engage with information will assist in the development of appropriate pre-interview questions about project requirements, which in turn will better inform the assistance provided and maximise the effective use of both researcher's and librarian's time.

Although the outcomes of this study can be usefully and practically applied in the above instances, they have potentially more value in the third instance of informing the development of information literacy for art and design studio students. Academic library involvement in information literacy development has been traditionally influenced by interpretations of information literacy standards that favour competency or "skills-based" developmental approaches. Although a competency approach is sometimes appropriate, particularly in instances (such as learning to operate equipment) that require step-by-step instructions, singular reliance on one approach is clearly inadequate for multilayered information literacy development. As the outcomes of this study show, many disciplinary groups engage with information in ways that are considerably more complex than competency approaches can reasonably address. Such a point of view is reinforced by Markless, who argues that

information literacy frameworks are “by their very nature, generic; designed to be applied across a range of contexts” which she believes “flies in the face of a well established research tradition that emphasises the importance of context in relation to information behavior” (2009, p. 30). Additionally, Boon, Johnston and Webber argue that because information literacy frameworks emerge from the experience of library practitioners, they “reflect the conceptions of those practitioners, but do little to illuminate the conceptions and experiences of other groups” (2007, p. 206).

The issue therefore is not that information literacy frameworks are incorrect, but that they reflect a partial perspective and are therefore only applicable in some contexts, not all. Problems can arise in practice if such frameworks are interpreted narrowly, or if they are perceived to represent the complete spectrum of information literacy development potential. The ANZIL standards (Bundy 2004) are therefore more helpfully perceived as a framework for thinking about information literacy; and in the context of this study they are useful for comparing how the relational outcomes of this study differ from a skills-based perspective.

In effect, the skills-based standards and the relational outcomes of this study represent different modes of viewing, interpreting and responding to the same phenomenon. The standards represent generic skills that largely steer clear of context—except in the general sense of leaning towards an academic context—and the outcomes of this study represent ways of experiencing information that pertain to art and design disciplines, and particular forms of research, within a specifically university context. At least five of these categories of description can be loosely aligned with the standards, as illustrated in Table 14 (next page).

Recognising a need for information (ANZIL Standard 1) is a large part of experiencing information engagement as *building infrastructure*, whether in the sense of building foundations or of connecting with personal or community narratives. At the point of learning something new, or learning to become a member of a particular community, there is an innate understanding that information is needed, in whatever form is deemed appropriate for learning. The novice may gather too much information or may be influenced simultaneously by diverse information content, but, with experience and guidance, will develop methods of structuring information in order to manage it and to record and organise ideas, whether through visual diaries or through records of completed work, or other structural devices.

Table 14 Overlap between ANZIL standards and categories of description

ANZIL standards	Category of description as identified in this study
Standard 1. Recognises the need for information and determines the nature and extent of the information needed	Building infrastructure
Standard 2. Finds needed information effectively and efficiently	Building infrastructure Making connections
Standard 3. Critically evaluates information and the information-seeking process	Experimentation
Standard 4. Manages information collected	Building infrastructure
Standard 5. Applies prior and new information to construct new concepts or create new understandings	Building infrastructure Making connections Altering perspective
Standard 6. Uses information with understanding and acknowledges cultural, ethical, economic, legal and social issues surrounding the use of information	Socially interacting

Source: Standards from Bundy, 2004, p. 11

As shown in Table 14, *building infrastructure* overlaps with several of the ANZIL standards, and this can be explained by the standards being primarily focused on information as content, which mirrors the primary focus of practitioner researchers experiencing information engagement as *building infrastructure*. So ANZIL Standard 2, which covers finding information, still relates to *building infrastructure* but also to *making connections.* "Being open to serendipity" is probably not what the authors of those standards had in mind when they imagined finding information effectively and efficiently, but this link has been highlighted in several other studies, most notably Hemmig's, whose respondents reported high success rates in finding information through a practised mindfulness that Hemmig described as "intentional, engaged passivity" (2008, p. 354). Although, as earlier mentioned, being both engaged *and* passive is not really possible, if "passivity" is perhaps replaced by "relaxed expectancy" then the description comes closer to *making connections* as defined in this study.

The critical evaluation covered by ANZIL Standard 3 can be related to information engagement experienced as *experimentation*. Again, experimentation as evaluation is probably not what authors of the standards had in mind, but there are interconnections between the seemingly different purposes, on the one hand, of critically evaluating written words and on the other of manipulating various forms of material to evaluate possibilities. Participants in this study who

experienced information engagement as *experimentation* were involved in both intentional evaluative processes, and also responded to fortuitous accidents that required dealing creatively with various limiting factors, like minimal space or the lack of some materials. Whether evaluating words, testing affordances of materials, or responding to situations arising, there is a need for creative and critical thinking, and this is a linking factor between ANZIL Standard 3 and the *experimentation* category.

ANZIL Standard 4 covers management of information, and this most closely resembles the structuring processes discussed in the *building infrastructure* category. It is unlikely that the authors of the standards ever imagined information management systems that would ultimately metamorphose into artworks, as described by (P9) who talked about "twisting" his information management system creatively. Albeit in different ways, both ANZIL Standard 4 and the *building infrastructure* category relate to organising or structuring information content.

ANZIL Standard 5 involves knowledge construction, whether in terms of knowledge that is new to an individual, or is new to that which is collectively known. This standard talks about constructing new concepts or understandings, which is the aim of those experiencing information engagement in three categories: *building infrastructure, making connections* and *altering perspective.* The experiences in *building infrastructure* that involved creating particular narratives may be like the described experience of (P11) creating various different personae, or may be like the experience of creating personal narratives, as described by (P2). Standard 5 also relates to *making connections* particularly in those instances whereby tacitly known clues cognitively coalesce to enable new understanding via tacit integration (Polanyi, 1967). The category of *altering perspective* also pertains to this standard in terms of participants engaging with information to create alternative perspectives, whether by physically travelling to somewhere else or just by changing some aspect of their daily environment. Those experiencing information engagement as *altering perspective* are gaining new ways of seeing that ultimately lead to changed understanding, or re-interpretation.

ANZIL Standard 6 is concerned with the cultural and social use of information, and this relates in part to the *social interacting* category, especially when those experiences are connected to community involvement and to following intellectual passions. The negotiation processes associated with developing community involvement may include responding to broader socio-cultural issues, or trying to get "others" involved in the creative process, or interacting with

exhibition audiences who view or participate in the research outcomes. Intellectual passions involve commitments to ideals larger than any one researcher's own creative process and are related to issues important enough to fuel perseverance with particular lines of enquiry, even when this often involves struggling against seemingly insurmountable obstacles.

The category that encompasses experiences of information engagement for *modifying states of mind* cannot, however, be reasonably linked to any of the information literacy standards. This category possibly represents the most intangible forms of information engagement that participants were found to have experienced, and although sometimes involving the use of information content, these are affective actions that are outside the boundaries of competency-based descriptions. Although each of the previously discussed categories of description can be loosely aligned, but also go beyond the ANZIL standards, *modifying states of mind* cannot be likewise aligned because it represents an affective mode of information use that the standards completely omit.

Although sometimes overlapping, the findings of this study show that effective information engagement encompasses considerably more complex behaviour than the ANZIL standards were designed for. This disparity highlights a need to view information literacy from a wider perspective so as to enable more comprehensive and disciplinary inclusive understandings. A wider outlook is endorsed by Bruce's ideas concerning the efficacy of developing "informed learning" experiences that might be influenced by a variety of different perspectives that are determined by particular contexts or educational aims. In terms of the outcomes of this study, Bruce's "relational frame for informed learning" (2008, pp. 32-3) is especially relevant. When viewed through a relational frame, information literacy is considered to be "a complex of different ways of interacting with information" (p. 32) that might be experienced as "objective, subjective or transformational" (p. 32). This means that using a relational approach for information literacy development will involve opportunities for students to gain new understandings of information engagement, thereby helping them to "see the world differently" (p. 32). Teaching from a relational perspective also helps students increase the complexity of their awareness by drawing their attention to critical ways that a particular phenomenon might be experienced. This study has identified six different ways that information engagement might be experienced when informing art and design, providing evidence of critical variations that can inform the creation of information literacy developmental opportunities for art and design students.

Applying Outcomes to Information Literacy within Studio Learning

This study has focused on situated information engagement occurring as art and design practitioner researchers inform their research. These findings overlap and extend existing information literacy frameworks but do not claim to replace them. It *is* claimed, however, that in situational instances like studio practice where information literacy frameworks inadequately reflect actual information use, these findings provide practical alternatives. Mayer's survey of art librarians, discussed in Chapter 3, provides a useful tool by which to illustrate this. Her survey sought information about embedded information literacy programs in studio courses. Eighty-four per cent of the 67 respondents reported some type of challenge associated with promoting information literacy for studio courses (2010) as per Mayer's summary reproduced in Table 15. These challenges experienced by actual art librarians working with studio students provide a useful structure for illustrating how the findings of this study can be used to respond to real issues in practice.

Table 15 Challenges for IL development opportunities in studio courses

Challenges associated with trying to embed information literacy development into studio courses
Little or no faculty buy-in regarding information literacy
Difficulties in engaging art students in text-based databases and research
Lack of a written assignment to tie with information literacy
Difficulties making information literacy skills applicable to artistic techniques and finding inspiration
Demands of adjusting instruction teaching methodology to visual and kinetic learners
Engaging art students in process-oriented ways
Not enough [library] staff
Locating materials artists need across disciplines
Teaching both scholarly and popular sources

Source: Mayer, 2010, p. 151

Table 16 presents some starting points for translating the outcomes of this study into activities that can help art and design students to enhance their information literacy. This table is not intended to be all-inclusive, but instead provides suggestions to demonstrate how the outcomes of this study might begin to be practically utilised.

Table 16 The outcomes of this study translated into strategies for IL development in studio courses

Information engagement experienced as:	Might happen if I consider:
Building infrastructure	- information sources (digital and physical) e.g., libraries, bookshops, galleries, museums, internet, etc. - information finding techniques, database search strategies, internet search tips, etc., - information management (digital and physical) e.g., bibliographic management systems, visual diaries, portfolios, time-lines, glossaries, databases, archives, etc.
Making connections	- relationships between ideas - intersections between disciplines - wider/narrower contexts - what the background stories are - where/what this might lead to
Socially interacting	- learning who else has believed in this idea and why - learning who disagrees with that position and why - learning from every contact (in whatever shade of good and bad) - learning about others who create like this - thinking about and articulating whatever I am passionate about - my own level of involvement in something - how individual actions have social impacts - reciprocity – in what ways there is give and take - the types of information that require negotiation to access - which communication channels are open and available - which information communities are accessible - who or where potential collaborators might be
Altering perspective	- my habitual perspective - how travelling changes how I see the world - how I experience an original artefact and a copy differently - how to observe my local area like a stranger/tourist/someone else - how others relate to me if I change my appearance - how my work changes if I physically locate it somewhere else
Experimentation	- critically evaluating information - creatively responding to limitations - playing/having fun with information - brain storming - mind mapping - trying new approaches/techniques to see what information arises
Modifying states of mind	- how I might recreate past feelings (right/good/wrong/bad) - what type of information stimulates my thinking - what type of information quietens my mind - what is the ideal work environment for me

Faculty buy-in regarding information literacy.

In terms of the first challenge that related to "little or no faculty buy-in regarding information literacy" (Mayer, 2010, p. 151), this study provides an alternative avenue for talking about information literacy. The fact that art and design faculty members do not see information literacy frameworks as relevant to studio learning goals is unsurprising. The emphasis on text-based information and the largely linear structure of information literacy frameworks seldom reflect how artists and designers actually engage with information for their work. Depending on access to the faculties they support, librarians might talk to studio teaching staff about how they themselves inform their work and how they hope their students will also learn to do so. That input may then be considered in terms of the experiences of information engagement as described in this study and, if appropriate, developmental opportunities might be devised to allow students to experience engaging with information in the ways identified. Seeking such faculty-specific information has the potential to allow librarians to create opportunities more closely matching the learning and teaching strategies that students are already experiencing. By promoting information literacy development in terms of studio-based learning opportunities—as per examples outlined in Table 16—faculty "buy-in" might be more effectively achieved. As will be later discussed, studio-based learning is essentially inquiry-based, in that "research underpins students' creative practices" (Sims & Shreeve, 2012, p. 57). This focus on inquiry learning provides many possibilities for librarians' involvement in students' information literacy development, but those possibilities may involve stepping away from the teaching content and methods more usually employed for library instruction.

Difficulties engaging art students in text-based databases and research.

Reported challenges associated with engaging students in text-based databases and research might be addressed by focusing on how database searching can support art and design students' preferred ways of engaging with information, perhaps tapping into their proclivity for browsing information. Exercises might involve students undertaking random searches within one or more databases, then presenting (perhaps in ideogram format) "creative" connections between the content found. Connections could be factual or fictional because the emphasis should be on creativity and thinking outside the box. Although technically efficient methods of searching databases may be part of the conversation, this kind of exercise is more concerned with the ways that information might be used and how creative connections ultimately stimulate art and design. Table 16 shows the outcomes of this study translated into

practical strategies for incorporating information literacy into studio-based learning, and provides more ideas for engaging with information to *make connections.*

Lack of a written assignment

Challenges stemming from the lack of written assignments might be addressed by using strategies as outlined in Table 16 and particularly by asking students to present their ideas through various non-text based modes. A good example of non-text learning outcomes is provided by the Dorothy H. Hoover Library at the Ontario College of Art and Design where students were invited to create and exhibit artworks that thematically reflected "the library's daily practices, collections and guiding philosophies" (Payne, 2008, p. 35). That process enabled students to engage with information in ways that challenged them to "reflect on philosophical and ethical issues currently confronting libraries" (p. 35). Payne's approach shows information literacy development producing outcomes involving the creation of artefacts or performances that are negotiated and discussed beforehand and critiqued afterwards. The potential for learning from these types of activities is likely to be much greater than that which is enabled through traditional library tutorials that focus on written assignments. The Ontario initiative exemplifies how such interactions can be designed around particular student projects and linked into particular methods of enquiry.

Making IL skills applicable to artistic techniques and finding inspiration.

Challenges associated with "making information literacy skills applicable to artistic techniques and finding inspiration" (Mayer, 2010, p. 151) could be addressed by the findings of this study that show experiences of information engagement are inextricably intermeshed with creative techniques and inspiration. By temporarily pulling apart the tightly woven fabric and making some particular experiences more explicit, the possibilities for developing information literacy in disciplinarily relevant ways may in turn be increased.

Adjusting for teaching methodology for visual and kinetic learners.

Challenges associated with the "demands of adjusting teaching methodology to visual and kinetic learners" (p. 151) might be addressed by understanding effective information engagement as constituting more than skills associated with finding and evaluating written information. For example, an activity that demonstrates how a changed perspective can alter information received might require students to view their daily trip to university for one week.

They might be asked to consider that experience from the perspective of someone else, or to look for incongruities, to expose aspects of their environment that they usually take for granted. This new perspective may then be presented in visual ways that are discussed and group critiqued. In this activity students are required to think about how a changed perspective can sometimes solve existing problems or can suggest new ways of moving the work forward. By focusing on the *experience* of a different perspective, this type of activity is likely to be inclusive of preferences for kinetic and visual learning.

Engaging art students in process-oriented ways.

Challenges associated with "engaging art students in process-oriented ways" (Mayer, 210, p. 151) might be addressed by looking at how information engagement processes can be related to creative processes experienced through studio learning. A competency-based approach to information literacy development might perceive information-seeking and use in terms of linear progress through stages but, as outlined by Foster (2006), in almost all disciplines the reality is usually very different. If considered in terms of information engagement being experienced as *experimentation*, then information literacy development activities might be considered as another mode of assessing information possibilities. Just as certain tools, like an antique pokerwork machine, or new computer software might be experimentally tested in terms of suitability for creative outcomes, so different information tools can be similarly employed. Such an approach, however, requires librarians to respond creatively to situations or projects that students are already experiencing in their studio learning, as opposed to trying to make their information engagement fit into pre-prepared information literacy frameworks. Other ideas for engaging with information in ways that might be experienced as *experimentation* are outlined in Table 16.

Not enough library staff.

Challenges associated with "not enough staff" (Mayer, 2010, p. 151) are difficult to overcome, particularly when the complete staff of some small libraries might consist of only one or two people. In such circumstances it may still be possible for librarians to play advisory roles for teaching staff interested in embedding information literacy development opportunities into studio courses. The findings of this study may help librarians to recognise the ways that existing studio programs are already providing information literacy development opportunities, and to discuss how they may be made more explicit. If space allows, it may be

possible to create displays of library resources that are linked to the various ways of experiencing information engagement: for example, displays of resources may illustrate connections between particular ideas, or reflect particular projects that students are involved in. Asking students for display suggestions and involving them in display creation might be other options for instigating developmental interactions in time sustainable ways.

Locating materials across disciplines.

Another reported obstacle in Mayer's survey results is associated with "locating materials [that] artists need across disciplines" (2010, p. 151). This challenge may be related to funding limitations that limit resource access, but might equally reflect librarians becoming daunted by the seemingly inexhaustible range of content that artists and designers are informed by. Hemmig has for example noted that "artists' information needs are extremely idiosyncratic, and artists require a great deal of information with no epistemic relationship to art collections" (2009, p. 694). If information literacy development is perceived in terms of teaching students about all the potential tools and sources that they might ever need to use, then embedding information literacy into finite studio courses might seem an unattainable ideal. However, if information literacy development is instead perceived in terms of *introducing* students to potential ways that information can be engaged with for the purposes of creative research, the ideal is then more achievable. This study highlights the reality of art and design practitioner researchers experiencing information engagement in multidisciplinary and multidimensional ways. The occurrence of information engagement might be planned or unplanned, within a multiplicity of sites that can potentially provide required information. If it is accepted that libraries represent only one—albeit an important one—of these many different information sites or situations, then problems with libraries being unable to provide access to all types of information simply disappear. A particular library may be a *primary* source of information, but will never be the *only* source of information. If, as Lloyd suggests, we conceptualise the "information literate" person as a "knowing user of information" (2010, p. 154), then deeper understanding of the range of ways that art and design practitioner researchers actually experience information engagement in academic contexts would allow librarians to facilitate information literacy development opportunities that more appropriately reflect the expert experience in practice.

Teaching both scholarly and popular sources.

The final challenge reported by art librarians responding to Mayer's survey was associated with "teaching both scholarly and popular sources" (2010, p. 151). Like the challenge just discussed, this might be variously interpreted. It may be that financial limitations restrict purchasing access to scholarly materials, which tend to be more expensive than resources directed at broader (popular) markets. Open access digital commons are shifting this equation somewhat, but academic library finance managers are still largely held hostage to the financial priorities of publishing companies. Even the biggest libraries have budget limitations, and difficult collection development choices will always need to be made. However, if the challenge of "teaching both popular and scholarly resources" (p. 151), relates to librarians wanting students to use more scholarly sources because popular sources are perceived to be inappropriate to an academic setting, then the results of this study may again be utilised.

Compatibility between these qualitatively different ways of experiencing information engagement and Bruce's (2008) relational frame for informed learning has been discussed in an earlier section of this chapter. When approaching information literacy development from Bruce's relational perspective, students' preference for popular sources creates useful opportunities for demonstrating differing perspectives of the same phenomenon. Activities might include looking at different examples of idea representation (perhaps in magazines, blogs, movies, digital games, hip-hop music, scholarly books, paintings…) and talking about how the same idea is represented differently, in more or less complexity. Students can be enabled to experience information engagement as *making connections* when they can see the same idea represented in different modes, dimensions or interpretations. Dependent on the context, these different representations can be more or less appropriate for any given purpose.

As the examples in Table 16 show, the outcomes of this study can be practically translated into developmental activities for information literacy. This table is not intended as an all-inclusive list, but rather as a list of possible starting points that can be modified, adapted and replaced in response to contextual requirements. Issues of learning assessment must also be considered: as Bruce suggests, within a relational frame for informed learning, assessment is designed "to reveal ways of seeing or experiencing the phenomenon" (2008, p. 32). This will require librarians to venture beyond the multiple choice quizzes associated with competency learning and become involved in assessing visual and aural descriptions of learning in the form

of artefacts or performances. As studio students will be quite familiar with peer assessment such as group critiques, this path and the previously mentioned example from the Ontario College of Art and Design (Payne, 2008) also provide useful signposts for new approaches.

This section on responding to challenges in practice provides suggestions for practically applying the findings of this study. For information literacy development, these outcomes show effective information engagement as more complex than the sets of competencies defined by information literacy frameworks. In a relational sense, this study contributes an alternative view of information literacy by focusing on how art and design practitioner researchers actually experience information engagement throughout their creative practices. Seeing the familiar in different ways can illuminate important new possibilities, as emphasised by artificial intelligence pioneer and MIT professor Marvin Minsky, who argues that real understanding only comes from knowing something in many ways**.** In Minsky's opinion, "if you understand something in just one way, and the world changes a little bit and that way no longer works, you're stuck, you have nowhere to go" (in Brockman, 1996, p. 163). In a world of accelerating change, that statement still rings true. Greater understanding of how researchers actually use information in practice is important not only for the development of information literacy learning opportunities but also contributes to academic librarianship more generally by extending ideas about what it means to engage with information effectively. Critically evaluating the diverse ways that information is used in university contexts enables librarians to appropriately respond to ongoing changes in the profession.

Applying Outcomes to Curriculum Planning for Studio Learning

Although obviously only one aspect of creative research, this study shows information engagement to be a fundamentally important aspect of the research process. Sometimes information engagement is explicit and outwardly apparent (as in some aspects of *building infrastructure*), at other times tacit and embodied (as in some aspects of *experimentation* and *modifying states of mind*). The outcomes of this study show research as a process that involves a variety of different ways of engaging with information. Looking at research practice from an information engagement perspective may highlight opportunities for involving students in research processes at early stages of their study careers.

The value of involving students in research and enquiry at early stages of their study has been widely discussed (e.g., Healey & Jenkins, 2009; Hounsell, 2002; Mockridge et al., 2009;

Wareham, 2008; Willison & O'Regan, 2007); and Healey and Jenkins's (2009, p. 7) four modes of research involvement (Table 17) were discussed in Chapter 2.

Table 17 Undergraduate research and inquiry in the curriculum

Research involvement mode	Learning	Curriculum content	Teaching mode
Research-led	Students learn about research content	Disciplinarily significant knowledge	Information provided to students
Research-tutored	Students learn about research content	Disciplinarily significant knowledge	Group discussion of information provided
Research-oriented	Students learn about research content and processes	Both knowledge (content) and research techniques (processes)	Enquiry-based learning - activities to engender a research ethos
Research-based	Students learn as researchers	Designed around particular research projects	Enquiry-based learning – involvement in actual research projects

Source: Adapted from Healey and Jenkins, 2010, p. 237

Talking and writing about disciplinarily significant research content is a common learning activity in undergraduate curriculums. Healey and Jenkins, drawing on the work of Griffiths (2004), identify these types of activities as research-led (learning about content) and research-tutored (discussing content). Less frequently, undergraduate students become involved in "research-oriented" activities that enable the learning of inquiry skills and techniques and/or "research-based" activities that allow them to actually undertake their own research (Table 17). The infrequency of opportunities for undergraduates to participate in these more active research experiences means they are often inadequately prepared for undertaking research in fourth-year honours or postgraduate degrees.

Some higher education institutions in the United States were early adopters of undergraduate research involvement programs: for example, MIT (Massachusetts Institute of Technology) initiated an Undergraduate Research Opportunities Program (UROP) in 1969, which continues to offer undergraduates "the chance to work on cutting edge research — whether you join established research projects or pursue your own ideas" (UROP, n.d.). The many benefits that can ensue from actively involving undergraduates in research became more generally

acknowledged following the establishment of the Boyer Commission on Educating Undergraduates in the Research University in 1995. This led to the establishment of a number of groups within the US and UK that champion the development of undergraduate research programs, in particular the Center of Undergraduate Research in the US and the Reinvention Centre for Undergraduate Research in the UK. Despite this increased interest, studies show research universities are actually less likely than non-research universities and liberal arts colleges to initiate undergraduate research programs (Stephens, Jones & Barrow, 2011, p. 66). Typically, the faculties—in any type of university—most likely to incorporate undergraduate research into the curriculum are either science- or technology-oriented (p. 66). The higher incidence of undergraduate research opportunities in these faculties may be associated with particular research possibilities available within science and technology teaching and research. A similar argument might be made about possibilities within art and design faculties because studio-based learning and teaching is widely recognised as providing an optimal environment for enquiry-based learning, not least because it can embody a "unique practice community that connects academic and professional contexts" (Brandt et al., 2013, p. 329). The perceived effectiveness of the studio learning and teaching approach has led to it being adapted for use in a diverse range of disciplinary areas which include the teaching and learning of classroom management skills (Brocato, 2009), computer science (Greenberg, 2007; Lynch et al, 2002), creative writing (Tassoni & Lewiecki-Wilson, 2005), engineering (Leung, Stokes, & Bradbeer, 1996), physics (Wilson, 1994; Yeo, 2002), petrology (Perkins, 2005) and public administration education (Fenger & Homburg, 2011). In describing the optimal studio-based learning environment, Svensson and Edstrom note undergraduate students are required to

> approach new situations in a successful way, finding out their possibilities and, based on previous experience and knowledge, finding a way to act that will lead to the desired outcomes. The approaches in handling new and open situations have to be more innovative, compared to approaches in educational situations with a given subject matter and expected outcome. (2011, p. 25)

As an essentially enquiry-based approach, studio-based learning potentially provides an ideal environment for developing undergraduate research opportunities; and indeed, Sims and Shreeve have argued that research is "a vital component of undergraduate study in the arts because it underpins all professional creative practice" (2012, p. 63). Drew also confirms art and design undergraduates' routine involvement with research when she comments that

> Since undergraduate and postgraduate students are being developed as practitioners and practice underpins practice-based research, we can say that insofar as teachers frame their courses in content and delivery as building towards practice-based research, their students will be "engaged" with research from the outset. (2007, p. 6)

Given the prevalence of enquiry-based learning in studio courses it seems strange that studies of practitioner research at higher degree levels (Allen-Collinson, 2005; Hockey, 2003, 2007; Hockey & Allen-Collinson, 2000, 2005; Simmons & Holbrook, 2013) show many art and design practitioner researchers experiencing significant difficulties when commencing higher degree research. Some studies (e.g., Hockey, 2003; 2007) have indicated that such problems occur because artists and designers experience identity conflict when trying to reconcile strongly held views about the practice of making with academic research requirements. This suggests that although studio-based learning can successfully inculcate students into the habitus of the creative artist or designer, it is less successful in familiarising students with aspects of creative practice that are related to academic research and knowledge production. Partly this lack of success could be due to the fact that the "research" aspects of art and design practices tend not to be made explicit during the studio learning process. For example, Shreeve, Wareing and Drew point out that in studio-based learning and teaching

> There is less emphasis than in many subjects on formal knowledge and more on procedures and ways of working which are more or less appropriate in specific situations. This knowledge is frequently held tacitly by practitioners (both teachers and students) and therefore may not be readily articulated. (2009, p. 346)

Studio-based learning and teaching has been described as a "pedagogy of ambiguity" (Austerlitz et al., 2008, p. 6), and Sims and Shreeve agree that "the most significant issue for undergraduates in art and design is the need to cope with uncertainty, ambiguity, and the unknown" (2012, p. 57). When students are learning to translate original ideas into artefacts, outcomes will be "unique to the person creating the work, and the teacher is trying to bring this creativity forth from the student, enabling rather than instructing" (p. 59). Although avoiding prescriptive instruction is important, Austerlitz et al., (2008) warn that it should not be used as an excuse for poor communication between learners and teachers; sometimes explanations are necessary. As Sennett notes, workshops—or in this case studios—can only operate effectively as learning environments if a balance between tacit and explicit knowing is achieved, and experts should be "pestered to explain themselves, to dredge out the

assemblage of clues and motives that they have absorbed in silence within" (2008, p. 78). Sennett's discussion involves medieval craftsmen working in quite different circumstances to those experienced in studio learning in universities today, but he draws attention to the ongoing importance of making tacit knowing more explicit.

The difficulties experienced by many art and design undergraduates commencing higher degree research may be directly related to those aspects of creative practice that are tacitly acquired through the open and "ambiguous" processes of studio learning and teaching. Without being made explicitly aware of the "research" aspects of their creative work, students strongly self-identify as creative people (Hockey, 2003) but fail to develop any strong sense of themselves as researchers. One way of attempting to correct this may be by being more explicit about the tacit research skills and techniques that students are learning in studio environments. As suggested by Willison and O'Regan, "If all enquiry tasks are considered to play a part in student research skill development, even from the earliest years of schooling, then a more holistic, coherent and continuous view of student research may evolve" (2007, p. 398). When defining research activities suitable for undergraduate participation, Kinkead suggests these might "include scientific inquiry, creative activity, and scholarship" and that outcomes might be "a musical composition, a work of art, an agricultural field experiment, or an analysis of historical documents. The key is that the project produces some original work" (2003, p. 6). Kinkead's suggestions provide ample scope for studio-based enquiry being conceptualised and developed as legitimate opportunities for undergraduate research.

Identified barriers to involving undergraduates in research relate to their lack of disciplinary content knowledge causing them to be "incapable of participating at a level that allows for their active involvement" (Malachowski, 2003, p. 60). This does not necessarily preclude the possibility of research participation beginning at foundational levels however. For example, Brew notes that undergraduate research can occur in a variety of forms that may relate to the "different discourses and practices and different motivations" for program implementation, and involvement of undergraduates in research might "include all the opportunities provided for students to gain experience in planning and carrying out research, learn research skills appropriate to the discipline, and pursue and present research, that they encounter during their degree" (2013, p. 605). Exploiting research opportunities from projects already existing in the undergraduate curriculum could also overcome challenges posed by the resource limitations highlighted by Bowers and Parameswaran, who comment that "trying to replicate watered down versions of academic and postgraduate research amongst undergraduates is an

expensive proposition for all but small or wealthy universities" (2013, p. 457). By identifying critical ways that practitioner researchers experience information engagement for research, this study provide examples that could be used to introduce students to researching for and through their practice. By linking such activities to projects that the studio students are already involved in, they may begin to relate these inquiry processes to the larger task of academic research, encouraging self-identification as researchers and ultimately as creators of knowledge.

Studio projects that involve learning foundational concepts, or developing structuring elements such as portfolios or visual diaries, or that involve students articulating previously established—or new—affinities with specific artists or designers would be particularly suitable for pointing to the experience of information engagement as *building infrastructure*. Projects that involve students learning pattern recognition or to realise associations between seemingly disparate concepts or ideas would be most suitable for demonstrating information engagement being experienced as *making connections*. Projects that require students to learn to interact effectively with others, perhaps through group critiques of work or by collaborating with practitioner researchers from other disciplines, or through creating work with or for particular social communities, would be appropriate for discussing the experience of information engagement as *socially interacting*. Studio projects that involve students creating works that draw on emotional experiences, or that involve deep concentration, might be appropriate for discussing various forms of information engagement that is experienced for the purposes of *modifying states of mind.*

Although separating these opportunities into discrete studio projects belies the reality of projects that use several, or all, these ways of experiencing information, presenting separate examples usefully shows how tacit learning can be made more explicit. Making that learning more explicit creates possibilities for highlighting forms of research that are regularly occurring within studio practice, and allows those activities to be connected to research in professional practice and in advanced academic contexts. By being considered in terms of information engagement that is developed and refined through experience over time, the development of research capabilities can begin with the first studio project. Research by Levy and Petrulis shows that providing first-year students with opportunities to obtain "bounded independence in inquiry" in situations that balance autonomy with guidance and support can powerfully influence the development of "identity formation, personal epistemology and self-belief" (2011, p. 97). Although representing only one aspect of research, the fact that information

engagement is generally interwoven through research processes means that a focus on it can provide early exposure of students to active enquiry, helping them also to understand how their own practice is research. Developing the ability to think as a researcher is not only advantageous for students choosing to pursue research degrees but contributes to future professional practices by providing frameworks for progression – not the sort of frameworks that imply rigid rules, but in Wittgenstein's sense of a "knowing of how to go on" that is influenced by communities of practice, but is ultimately interpreted and enacted uniquely (as discussed in Burbules, 2008). A participant (P7) in this study, emphasised research as a "way to go on" with her comment:

> [research] actually brings with it inspiration. Because when I left art school and like a lot of artists … faced with that blank page or with a blank canvas, I found that very intimidating and I believe that's a problem with a lot of people. So I began a process of research, many, many years ago … with my artwork. And I found in that process of just, you know it could be *reading,* it could be looking at materials, lighting, technologies of some sort, talking to other artists, and sometimes, in almost unrelated areas, something will trigger an idea…

The ways of experiencing information engagement as presented in this study provide a holistic view of informing research, one that encompasses the intellectual, physical and emotional engagement of head, hand and heart (Rees, 2005). This means that research can potentially be informed through any combination of intellectual and cognitive processes (head), technical and skill processes (hand), and emotions and memories (heart), thereby increasing potential applications.

This discussion has explored ways that the outcomes of this research might be applied to the development of learning and teaching experiences in art and design studios, and in particular to the development of undergraduate research opportunities. Whilst not constituting the sum of research experience, information engagement is a significant aspect of any enquiry, particularly when that enquiry is considered in terms of the tripartite involvement of head, hands and heart (Rees, 2005). Although learning about the research of significant others is obviously important, helping students to identify as researchers is equally so. This is true not only for students who move into postgraduate research, but also for post-university creative practices. By making explicit the ways that experiences of information engagement inform scholarly research, opportunities are presented for involving undergraduates in research-

oriented and research-based (Healey & Jenkins, 2009; 2010) activities at early stages of their study careers. The six ways of experiencing information engagement presented by this study provide suggestions for helping curriculum developers to be more explicit about the tacit research learning that occurs within studio activities.

Applying Outcomes to Graduate Attribute Development

Neary and Winn have argued that in a globally economic sense, universities represent "one of the great success stories of the twentieth century, with numbers of students growing exponentially in the last fifty years" (2009, p. 126), but they also note that this success has come at a cost to the quality of learning and teaching. Saunders echoes Neary and Winn's point of view when he notes, "in a neoliberal world, all relationships, decisions, and actions are largely understood in economic terms" (2014, p. 208). Saunders sees this economic bias as potentially creating negative consequences in educational contexts, especially when emphasis shifts from learning and teaching to refocus on customer service. It is difficult to argue against the necessity of higher education being responsive to students' changing needs or against the need to find new and innovative methods for improving educational experiences, but focusing singularly on education from a customer service perspective can obscure what Wueste and Fishman describe as "the essential collaborative, participatory, reciprocal relationship that is central to effective teaching and learning" (2010, p. 3).

When learning is perceived as a consumer transaction, students are more likely to develop traits of academic entitlement. As argued by Singleton-Jackson, Jackson and Reinhardt, a sense of academic entitlement can occur when "on some level, students believe they are entitled to, or deserving of certain goods and services to be provided by their institutions and professors, something that is outside of the students' actual performance or responsibilities inside the classroom" (2010, p. 344). Extreme examples show students taking legal action for failing a course (e.g., Hare, 2013) or because promised future employment is not found within three months of graduation (e.g., Kessler, 2009). Strongly focusing on student satisfaction can also negatively affect teaching methods and educational content development, especially if students consider a degree as something they purchase rather than achieve (Molesworth, Nixon & Scullion, 2009). Mockridge et al. have noted that the shifting emphasis in higher education towards satisfying customers—as opposed to providing the best learning opportunities—can lead to "rising demand for more compartmentalised teaching deliverables and short courses" (2009, p. 4) which, as Boden and Epstein argue, can pressure academics to

“not just to make complex ideas easily accessible but to produce teaching and teaching materials that neither challenge nor change but can be consumed without undue effort” (2006, p. 227).

Clearly neoliberal reform has wrought significant changes on higher education sectors, but the seemingly ubiquitousness of neoliberal ideas can sometimes obscure the fact that it is (as Connell, 2006, p. 28 has noted) just a particular social project and that possibilities exist for responding in ways that involve neither submission or outright revolution. As Connell elsewhere articulates, “It is easy to despair about the current scene. But education itself has a resilience, has a grounding in social needs, that cannot be suppressed – and that will be heard” (2013, p. 104). For example, The Reinvention Centre for Undergraduate Research (Warwick University, n.d.) has developed the concept of “students as producers” as a positive challenge to assumptions about students being primarily consumers (Neary & Winn, 2009). Choosing the analogy “students as producers” was influenced by “a lecture, *Author as Producer,* given by [Walter] Benjamin to the Society of Anti-Fascists in Paris in April 1934 in which he discussed how “radical intellectuals intervene in moments of social crisis, and what form should that intervention take” (Neary, 2010, pp. 2-3). This connection positions undergraduate students’ active involvement in research as more than an innovative and effective method for improving learning and teaching: it is also a critical response to the negative affects of neoliberal assumptions. By reconceptualising students as “producers” and by adjusting curriculums to enable undergraduate research opportunities, universities can push back against what Boden and Epstein describe as “the recasting of the teaching capacity of universities as sites of knowledge *consumption*” (2006, p. 227; original italics).

The concept of student as producer is being employed in various different contexts. In particular it has been the impetus for a collaborative project based at the University of Lincoln (UK) with additional participants from the University of Hertfordshire (UK), the University of Central Lancashire (UK), the University of Warwick (UK), Vanderbilt University (US), the University of British Columbia (Canada) and Macquarie University (Australia). As described on the University of Lincoln website, “Student as Producer restates the meaning and purpose of higher education by reconnecting the core activities of universities, i.e., research and teaching, in a way that consolidates and substantiates the values of academic life “(University of Lincoln, n.d.). The focus of the Student as Producer project is to develop opportunities for undergraduate students to work collaboratively with other students and academics, and in particular for undergraduate student involvement in research.

Rejecting ideas about students being consumers of education does not in any way suggest that students should not experience high quality learning and teaching during university study. On the contrary, it is based on the conviction that by actively participating in their learning, students achieve better educational outcomes. Possibly one of the most optimistic aspects of this reconceptualisation comes from the possibilities offered for responding proactively to reforms that aim to increase the quality of higher education. From a quality assurance perspective, active involvement of undergraduates in research helps to address criticisms identified by Merkel (2003), about universities appearing to focus on research to the detriment of student learning. Being provided with opportunities to connect their own learning to the wider research goals of the university allows students to begin to perceive themselves as stakeholders in wider university research environments (Turner, Wuetherick, & Healey, 2008). In terms of student satisfaction, Turner at al. report that students perceive themselves as learning best "when undertaking their own research projects or paper", which provides evidence for research involvement positively influencing students' engagement with learning (p. 205).

Development of an undergraduate research environment that fosters the ideal attributes of "intellectual curiosity and inquiry" as proposed by Webster and Kenny (2011, p. 362) also counters accusations about universities failing to equip graduate students with "work-ready skills". If, as Gray suggests, participation of artists and designers in research degrees is "the best mechanism to raise awareness of critical and contextual issues of practice, analyse and interpret ideas, and develop new cultural strategies" (1998, p. 86), then students who develop such awareness through undergraduate research are not only better prepared for research degrees, if they choose that path, but also for professional practice outside the university. For those choosing research degrees, undergraduate research experience can lesson the confusion identified by Simmons and Holbrook associated with suddenly having to grapple with "the range of debates and the extent of uncertainty about the nature of practice-based research and research contribution" (2013, p. 204). By participating in these debates throughout their undergraduate studies, students have time to consider and develop ideological positions before commencing a research degree.

Providing opportunities for undergraduate students to be involved in research not only increases student satisfaction (Justice et al., 2009; Schuster & Birdsong, 2007) and learning outcomes (Curtis et al., 2012; Turner et al., 2008) but also provides evidence for quality indicators such as graduate attribute development. Bosanquet, Winchester-Seeto and Rowe

note instances in which stated graduate attributes simply reflect future ideals that are not addressed in "the enacted curriculum (what is taught within disciplines) or experienced curriculum (the capabilities a student develops)" (2012, online). By contrast, active involvement of undergraduates in research can provide evidence of students developing graduate attributes such as being "capable of independent and collaborative enquiry" or "capable of independent, self-directed practice" (University of New South Wales, n.d.) This evidence is apparent not only to those undertaking quality audits but also to the students themselves who can, as suggested by Su, experience the development of graduate attributes "in relation to their own [learning] contexts" (2014, p. 6).

The outcomes of this study show six different ways that art and design practitioner researchers experience engagement with information whilst undertaking research. By focusing on that engagement, undergraduates might be helped to also understand how their studies relate to wider research processes. By being more explicit about the tacit ways that practitioner research is informed, students will more easily come to understand the contributions of structured foundational knowledge (*building infrastructure*), of being open to new possibilities and configurations (*making connections*) and the input of others (*socially interacting*), of challenging habitual modes of thinking and seeing (*altering perspective*), of tinkering with ideas (*experimentation*) and of using information to create optimal environments (*modifying states of mind*). Considering research activities in terms of information engagement allows concrete connections to be made between ongoing studio projects and the development of graduate attributes associated with independent, collaborative and self-directed inquiry. Whilst this should not be the only option for involving undergraduates in research, information engagement within existing projects represents a readily accessible entry point. By helping students to perceive how engagement with information can contribute to new relationships with the world, the outcomes of this research can factor into enabling students' self-identification as producers of knowledge. Making information engagement more explicit as an aspect of creative processes also sidesteps arguments (e.g. as outlined in Green, Hammer, & Star, 2009) about whether graduate attributes are best developed in discipline-specific or generic contexts. As all art and design is ultimately informed by some "thing" or "process", a focus on information engagement in research provides opportunities for attribute development occurring both within ongoing studio projects and also in separate library workshops that add value to the studio learning.

An increased emphasis on the involvement of undergraduate students in university research communities can not only better prepare them for postgraduate studies and post-university lives, but can also provide effective and proactive ways of countering the pervasiveness of consumerist views of higher education. By providing opportunities for immediate involvement in research processes that are related to information engagement, the outcomes of this research study can contribute to enabling students to actively participate in graduate attribute achievement at earlier points in their academic careers. Since all creative work is ultimately informed (either through content or process), information engagement is relevant to all studio projects. In addition, by being non-prescriptive in terms of types of information or how they are applied, information engagement allows students the flexibility required for the creation of unique work. This flexibility means that even if, as has been suggested, graduate attribute agendas are ultimately being driven by "concerns of quantification and categorization" (Green et al., 2009, p. 21), the actual development of graduate attributes can more authentically match Su's ideal of the process being "grounded in a person-based, self-directed approach" (2014, p. 7).

Possibilities for Further Research

One of the participants (P19) of this study made the comment that "every painting is the end product of a number of choices. And another hundred thousand paintings that you didn't do because you made these choices to get to this particular end". That comment is also applicable to this study because, as this research progressed, a number of potentially different pathways opened up. Obviously time restraints always limit the distance that any side-roads can be followed, but uncompleted or untaken journeys have potential as future research projects.

One future research possibility is to explore, in a similar fashion, the information engagement of other practitioner researchers in universities (e.g. engineers or architects) to discover if information engagement experienced by other practitioner researchers is similar or different to that found here. Outcomes showing similar forms of experience, or that identify strong differences, could be usefully employed by librarians and others supporting multidisciplinary research projects. Another possibility would be to explore the information engagement practices of art and design practitioners working outside university environments. Such a study might investigate whether community practitioners experience information engagement in the ways identified by this study and whether some practices are more prevalent than others. These findings may be particularly helpful for establishing which types of information

engagement are most effective for community practitioners, thereby assisting information literacy development in libraries outside university contexts.

Other possible research might monitor and assess the application of this study's results through practical collaborative projects with art and design students engaging with information; the outcomes might then be able to be applied to the consideration of "threshold concepts" related to art and design students effectively engaging with information within their creative processes. If threshold concepts can be identified, then collaborative studies with people in university preparation courses is another possibility, particularly in terms of pre-acculturation for the specific demands of university study. These, and other possibilities, show that one journey's end can be simply the start of another.

Final Comments

By comparing the results of this study with those of previous enquiries, and by suggesting potential applications and further research prospects, this chapter connects the past with the future. Previous chapters have also compared the past and present, making connections between macro and micro events. In this way, this thesis presents a relational perspective that aims to look beneath what is generally taken for granted, so as to make the tacit explicit. The aim of making the tacit explicit led this study to explore social and political factors underlying university research as well as factors that have impacted on art and design practitioner research practices in universities. Making the tacit explicit is also evident in relational aims to look beneath outwardly visible manifestations of action, in order to consider structural relations that Bourdieu describes as "invisible, or visible only through their effects" (1983, p. 311). When structural relationships between the field of higher education and the habitus of art and design practitioner researchers are considered in terms of Bourdieu's conceptual tools of field, habitus and capital, it becomes easier to understand James's conviction that "past social structures get into present action and how current actions confirm or reshape current structures" (2011, online). The symbiotic relationship between the habitus of individuals, the particular social groups within which they function, and the particular capital that provides them with legitimacy, means that external changes to a field will inevitably flow through to cause changes to the practices within it.

Looking at the ways that art and design practitioner researchers experience information engagement has unearthed many tacit ways that research is informed. Although information

engagement also occurs explicitly (for example when information is deliberately sought and considered), it appears that tacit information engagement becomes more likely as professional expertise is gained and as practices become increasingly refined and the particular processes that inform become embodied and more like "second nature". This study shows information engagement as relational, always requiring some form of interaction, at the forefront or periphery of focus, or at any point in between. As Gill describes it,

> Thus things, person, ideas, and events are experienced as "that with which we have to do"; they take on their reality in and through our meaningful interaction with them. They neither exist nor are known exclusively in and of themselves nor as functions of our intellectual capacities. They are encountered in relationship, in the push and pull of everyday life. (1993, p. 41)

The interactivity of information engagement as identified by these findings supports ideas about practitioner research occurring as a bricolage that makes practical use of research methods, strategies and empirical materials (if these exist and are appropriate), or otherwise as adapting or inventing research tools to suit particular circumstances. It has been emphasised by Stewart that practitioner researchers will select a research approach that offers the best possibilities for answering questions being asked; and that "the questions depend on their context, what is available in that context, and what the researcher can do [within a] setting" (2007, p. 127). The fluidity and variability of art and design practitioner research, functioning within academic environments that are marked by ever-shifting priorities, means that a wide variety of methods and approaches are ultimately used. This variability is reinforced by the findings of this study, showing information engagement being experienced in qualitatively different ways that are often directly influenced by the waxing and waning of creative opportunities within the university environment.

Information literacy has its own historical context and ideas about becoming and being information literate are interpreted and enacted in different ways; but despite the library profession's focus on producing and discussing standards and frameworks, the reality is that being information literate actually involves an ability to engage effectively with information for tasks at hand. Professional and personal lives in the future are likely to involve multiple roles and varied tasks that have not yet been imagined. When learning is considered as preparing for the unknown, it becomes more important to talk about being open to a variety of ways that information engagement might be experienced. This study has explored a particular form

of information engagement as experienced by a particular group of people within a particular context. The findings show researchers engaging with information in a range of different ways; but perhaps most importantly it shows researchers adapting their information engagement practices to take advantage of situational contexts as they arise. For those seeking to practise research in rapidly changing environments, this versatility and adaptability might perhaps be the expertise most important to develop.

As the first budget of the recently elected Australian Federal government comes up for negotiation in the Senate, debate rages over increased fees for tertiary education and higher interest rates on student loans. Domestic research students may no longer be exempt from tuition fees as they have in the past. When already carrying debt from undergraduate degrees, many may be dissuaded from doctoral study, particularly in disciplines like art and design where PhD graduation is unlikely to translate immediately into highly paid employment. Fewer students progressing to postgraduate research creates an even stronger argument for involving them in research during their undergraduate years.

There is no doubt that universities will be required to adapt to ever-changing social and political imperatives, but to survive and thrive it is important to build on existing strengths in learning, teaching and research by encouraging student research today as an investment for the future.

References

Abdi, S. E., Partridge, H., & Bruce, C. (2013). Website designers: How do they experience information literacy? *The Australian Library Journal, 62*(1), 40-52.

Adams, D. (1998). Examining the fabric of academic life: An analysis of three decades of research on the perceptions of Australian academics about their roles. *Higher Education, 36*(4), 421–435.

Adams, D., & Mullins, P. (1978). Meaning with the arts: The implications of Polanyi's epistemology for the arts. *Studia Mystica, 1*(2), 28–48.

Adams, M. (2006). Hybridizing habitus and reflexivity. *Sociology, 40*(3), 511–528.

Adams, P. J. (2007). Assessing whether to receive funding support from tobacco, alcohol, gambling and other dangerous consumption industries. *Addiction*, 102(7), 1027–1033.

Adams, R., Hardy, J., Russell-Sauvé, C., & Toler, P. (2007). *Painting a new picture of artists' information behavior.* (No. MLIS 510a Information Behaviour Group Paper). Washington: University of Washington. Retrieved January 19, 2012, from http://courses.washington.edu/mlis510/fall07/Group Papers/Artists IB.pdf

Adkins, B. (2006, March 30–April 1). *Closing comments.* Paper presented at the Speculation and Innovation (SPIN) Conference: Applying practice led research to the creative industries, QUT, Kelvin Grove, Brisbane, QLD.

Agar, M. (1996). *The professional stranger: An informal introduction to ethnography* (2nd ed.). San Diego, CA: Academic Press.

Akerlind, G. S. (2005a). Learning about phenomenography: Interviewing, data analysis and the qualitative research paradigm. In J. A. Bowden & P. Green (Eds.), *Doing developmental phenomenography* (pp. 63–73). Melbourne: RMIT Publishing.

Akerlind, G. S. (2005b). Phenomenographic methods: A case illustration. In J. A. Bowden & P. Green (Eds.), *Doing developmental phenomenography* (pp. 103–127). Melbourne, VIC: RMIT Publishing.

Akerlind, G. S. (2005c). Interim stages of the analysis of ways of experiencing being a university researcher. In J. A. Bowden & P. Green (Eds.), *Doing developmental phenomenography* (pp. 171–177). Melbourne, VIC: RMIT Publishing.

Akerlind, G. S. (2005d). Variation and commonality in phenomenographic research methods. *Higher Education Research and Development, 24*(4), 321–334.

Akerlind, G. S., Bowden, J. A., & Green, P. (2005). Learning to do phenomenography: A reflective discussion. In J. A. Bowden & P. Green (Eds.), *Doing developmental phenomenography* (pp. 74–100). Melbourne, VIC: RMIT Publishing.

Akinola, M., & Mendes, W. B. (2008). The dark side of creativity: Biological vulnerability and negative emotions lead to greater artistic creativity. *Personality and Social Psychology Bulletin, 34*(12), 1677–1686.

Albert, M. (2003). Universities and the market economy: The differential impact on knowledge production in sociology and economics. *Higher Education, 45*(2), 147–182.

Allen-Collison, J. (2005). Artistry and analysis: Student experiences of UK practice-based doctorates in art and design. *International Journal of Qualitative Studies in Education, 18*, 713–728.

Alony, I., Whymark, G., & Jones, M. L. (2007). Sharing tacit knowledge: A case study in the Australian film industry. *Informing Science: The International Journal of an Emerging Transdiscipline, 10*, 41–59.

American Library Association. (1989). *Presidential Committee on Information Literacy: Final report*. Chicago, IL: ALA. Retrieved April 20, 2012, from http://www.ala.org/acrl/publications/whitepapers/presidential

Arup, C. (2008). Research assessment and legal scholarship. *Legal Education Review, 18*(1), 31–54.

Ashworth, P., & Lucas, U. (2000). Achieving empathy and engagement: A practical approach to the design, conduct and reporting of phenomenographic research. *Studies in Higher Education, 25*(3), 295–308.

Association of College and Research Libraries. (2000). *Information literacy competency standards for higher education*. Chicago, IL: American Library Association. Retrieved April 16, 2012, from http://www.ala.org/acrl/standards/informationliteracycompetency

Astin, A. W. (1985). *Achieving educational excellence*. San Francisco, CA: Jossey-Bass.

Atkins, P. (2001). Information literacy and the arts: Be there or miss it! *College and Research Libraries News, 62*(11), 1086–1088.

Austerlitz, N., et al. (2008). Mind the gap: Expectations, ambiguity and pedagogy within art and design higher education. In L. Drew (Ed.), *The student experience in art and design higher education: Drivers for change* (pp. 125–148). Cambridge, UK: Jill Rogers Associates Limited.

Australia. Department of Education, Science and Training (2003). *Quality of Australian higher education*. Canberra, ACT: DEST. Retrieved May 7, 2012, from http://www.dest.gov.au/archive/highered/pubs/quality00_03/overview.htm#develop

Australia. Dept. of Education, Training and Youth Affairs. Evaluations and Investigations Programme. (1999). *Australia's information future: Innovation and knowledge management for the 21st century*. Canberra,ACT: DEET.

Australia. Dept. of Education, Training and Youth Affairs. (2000). *Learning for the knowledge society: An education and training action plan for the information economy*. Canberra, ACT: DEET.

Australia. House of Representatives, Standing Committee for Long Term Strategies, & Jones, B. (1991). *Australia as an information society: Grasping new paradigms: Report*. Canberra, ACT: Australian Government Publishing Service.

Australia. Ministerial Council for the Information Economy, & Australia. National Office for the Information Economy. (1998). *Towards an Australian strategy for the information economy: A preliminary statement of the government's policy approach and a basis for*

business and community consultation. Canberra, ACT: National Office for the Information Economy.

Baer, J. (2003). Evaluative thinking, creativity, and task specificity: Separating wheat from chaff is not the same as finding needles in haystacks. In M. A. Runco (Ed.), *Critical creative processes* (pp. 129–152). Cresskill, NJ: Hampton Press.

Baker, S., Buckley, B., & Kett, G. (2009). *Creative arts PhD: Future-proofing the creative arts in higher education: Scoping for quality in creative arts doctoral programs: Project final report*. Strawberry Hills, NSW: Australian Learning & Teaching Council.

Ball, S. J. (2000). Performativities and fabrications in the education economy: Towards the performative society? *Australian Educational Researcher*, *27*(2), 1–23.

Bannerman, C. (2004). Reflections on practice as research: The university, the artist, the research endeavour. *Digital Creativity, 15*(2), 65 –70.

Bannister, D., & Fransella, F. (1986). *Inquiring man: The psychology of personal constructs* (3rd ed.). London: Croom Helm.

Barnard, A., McCosker, H., & Gerber, R. (1999). Phenomenography: A qualitative research approach for exploring understanding in health care. *Qualitative Health Research, 9*(2), 212–226.

Barnett, R. (2000). *Realizing the university in an age of supercomplexity*. Buckingham, UK: Society for Research into Higher Education & Open University Press.

Barnett, R. (2004). Learning for an unknown future. *Higher Education Research and Development, 23*(3), 247–260.

Barrett, E., & Bolt, B. (Eds.). (2007). *Practice as research: Approaches to creative arts enquiry*. London: Tauris.

Barrie, S. (2006). Understanding what we mean by the generic attributes of graduates. *Higher Education, 51*(2), 215–241.

Bates, M. J. (1989). The design of browsing and berrypicking techniques for the online search interface. *Online review, 13*(5), 407–424.

Beaudoin, J. E. (2009). *An investigation of image users across professions: A framework of their image needs, retrieval and use.* PhD thesis, Drexel University.

Becher, T., & Trowler, P. (2001). *Academic tribes and territories: Intellectual enquiry and the cultures of disciplines* (2nd ed.). Buckingham, UK: Open University Press.

Behrens, S. J. (1994). A conceptual analysis and historical overview of information literacy. *College and Research Libraries, 55*(4), 309–322.

Bennett, D., Wright, D., & Blom, D. (2009). Artist academics: Performing the Australian research agenda. *International Journal of Education & the Arts, 10*(17), 1–15. Retrieved June 25, 2011, from http://www.ijea.org/v10n17/

Bennett, H. (2006). Bringing the studio into the library: Addressing the research needs of studio art and architecture students. *Art Documentation, 25*(1), 38–42.

Berridge, S. (2007). Arts-based research and the creative PhD. In J. Webb & J. Williams (Eds.), *The and is papers: Proceedings of the AAWP Annual Conference, University of Canberra, 22–27 November 2007* (pp. 1–10). Sydney, NSW: Australian Association of Writing Programs Retrieved May 12, 2011 from http://www.aawp.org.au/and-papers-proceedings-12th-conference-aawp

Bessant, B. (1996). Higher education in Australia: The Unified National System. *Education Research and Perspectives, 23*(1), 110–123.

Biggs, M. A. R. (2002a). Introduction. *Working Papers in Art and Design,* 2. Retrieved 19 March, 2005, from http://www.herts.ac.uk/research/ssahri/research-areas/art-design/research-into-practice-group/production/working-papers-in-art-and-design-journal

Biggs, M. A. R. (2002b). The role of the artefact in art and design research. *International Journal of Design Sciences and Technology, 10*(2), 19–24.

Biggs, M. A. R. (2006). Modelling experiential knowledge for research. In M. Makela & S. Routarinne (Eds.), *The art of research: Research practices in art and design* (pp. 180–204). Helinski, Finland: University of Art and Design Helinski.

Biggs, M. A. R. (2008). Editorial: The problem of interpretation in research in the visual and performing arts. *Working Papers in Art and Design,* 5. Retrieved June 24, 2011, from http://www.herts.ac.uk/research/ssahri/research-areas/art-design/research-into-practice-group/production/working-papers-in-art-and-design-journal

Biggs, M. A. R., & Buchler, D. (2008). Eight criteria for practice–based research in the creative and cultural industries. *Art, Design & Communication in Higher Education, 7*(1), 5–18.

Biggs, M. A. R., & Karlsson, H. (2011). Evaluating quality in artistic research. In M. A. R. Biggs & H. Karlsson (Eds.), *The Routledge companion to research in the arts* (pp. 405–424). London: Routledge.

Bigo, D. (2011). Pierre Bourdieu and international relations: Power of practices, practices of power. *International Political Sociology, 5*(3), 225–258.

Bird, C. M. (2005). How I stopped dreading and learned to love transcription. *Qualitative Inquiry, 11*(2), 226–248.

Blackmore, J. (1997). Disciplining feminism: A look at gender equity struggles in Australian higher education. In L. Roman & L. Eyre (Eds.), *Dangerous territories: Struggles for difference and equality in education* (pp. 75–99). New York: Routledge.

Blackmore, J. (2010). Policy, practice and purpose in the field of education: A critical review. *Critical Studies in Education, 51*(1), 101.

Blackmore, M. (2010, November 5–6). *Dimensions of awareness: Art / design researchers and information engagement*. Paper presented at the Curtin Humanities Tenth Graduate Research Conference: Creative Margins, Perth, Australia.

Bligh, D. (1993). Learning to teach in higher education. *Studies in Higher Education, 18*(1), 105–111.

Boden, R., & Epstein, D. (2006). Managing the research imagination? Globalisation and research in higher education. *Globalisation, Societies and Education, 4*(2), 223–236.

Bogh, M. (2009). Borderlands: The art school between the academy and higher education. In B. Buckley & C. John (Eds.), *Rethinking the contemporary art school: The artist, the PhD, and the academy* (pp. 64–75). Halifax, NS: Press of the Nova Scotia College of Art and Design.

Bolt, B. (2004). *Art beyond representation: The performative power of the image*. London ; New York: I.B. Tauris.

Bolt, B. (2008). A performative paradigm for the creative arts? *Working Papers in Art and Design 5*. Retrieved June 24, 2011, from http://www.herts.ac.uk/research/ssahri/research-areas/art-design/research-into-practice-group/production/working-papers-in-art-and-design-journal

Boon, S., Johnston, B., & Webber, S. (2007). A phenomenographic study of English faculty's conceptions of information literacy. *Journal of Documentation, 63*(2), 204–228

Booth, S. (1992). *Learning to program: A phenomenographic perspective*. Göteborg, Sweden: Acta Universitatis Gothoburgensis.

Booth, S. (1997). On phenomenography, learning and teaching. *Higher Education Research & Development, 16*(2), 135–158.

Borgdorff, H. (2007). The debate on research in the arts. *Dutch Journal of Music Theory,* 12(1), 1–22.

Borgdorff, H. (2008a). Artistic research as boundary work. In A. Arlander (Ed.), *How does artistic research change us? Proceedings of CARPA 1: 1st Colloquium on artistic research in performing arts theatre academy, Helsinki November 19–21* (pp. 4–11). Helsinki: Performing Arts Research Centre.

Borgdorff, H. (2008b). Artistic research and academia: An uneasy relationship. In U. L. Torbjörn (Ed.), *The yearbook of artistic research* (pp. 82–97). Sweden: The Council of Research.

Borgdorff, H. (2009). Onderzoek in kunsten bloeit. *Science Guide*. Retrieved March 14, 2013, from http://www.scienceguide.nl/200903/onderzoek-in-kunsten-bloeit.aspx.

Bosanquet, A., Winchester-Seeto, T., & Rowe, A. D. (2010). Changing perceptions underpinning graduate attributes: A pilot study. In M. Devlin, J. Nagy & A. Lichtenberg (Eds.), *Research and Development in Higher Education: Reshaping Higher Education: 33rd HERDSA Annual International Conference, 6–9 July, Melbourne, Australia* (pp. 105–117). Milperra, NSW: HERDSA.

Bosanquet, A., Winchester-Seeto, T., & Rowe, A. D. (2012, September 17–21). *Graduate attributes: Five questions*. Paper presented at the Expanding horizons: Celebrating learning and teaching Conference, Macquarie University. Retrieved May 20, 2014, from http://staff.mq.edu.au/teaching/workshops_programs/expanding_horizons/abstracts

Boud, D., & Lee, A. (Eds.). (2009). *Changing practices of doctoral education*. London: Routledge.

Bourdieu, P. (1977). *Outline of a theory of practice* (R. Nice, Trans.). Cambridge, UK: Cambridge University Press.

Bourdieu, P. (1983). The field of cultural production, or: The economic world reversed. *Poetics, 12*(4–5), 311–356.

Bourdieu, P. (1984). *Distinction: A social critique of the judgement of taste* (R. Nice, Trans.). London: Routledge & Kegan Paul.

Bourdieu, P. (1985). The social space and the genesis of groups. *Theory and Society, 14*(6), 723–744.

Bourdieu, P. (1986a). The forms of capital (R. Nice, Trans.). In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). New York: Greenwood Press.

Bourdieu, P. (1986b). The production of belief: Contribution to an economy of symbolic goods (R. Nice, Trans.). In R. Collins, J. Curran, N. Garnham, P. Scannell, P. Schlesinger & C. Sparks (Eds.), *Media, culture, and society: A critical reader* (pp. 131–163). London: Sage Publications.

Bourdieu, P. (1987). What makes a social class? On the theoretical and practical existence of groups. *Berkeley Journal of Sociology, 32*, 1–17.

Bourdieu, P. (1988). *Homo academicus* (P. Collier, Trans.). Cambridge, UK: Polity Press.

Bourdieu, P. (1990). *The logic of practice* (R. Nice, Trans.). Cambridge, UK: Polity.

Bourdieu, P. (1993). *Sociology in question* (R. Nice, Trans.). London: Sage.

Bourdieu, P. (1998). *Practical reason: On the theory of action*. Cambridge, UK: Polity Press

Bourdieu, P. (2000). *Pascalian meditations* (R. Nice, Trans.). Cambridge, UK: Polity.

Bourdieu, P., & Wacquant, L. J. D. (1990). *In other words: Essays towards a reflexive sociology*. Stanford, CA: Stanford University Press.

Bourdieu, P., & Wacquant, L. J. D. (1992). *An invitation to reflexive sociology*. Chicago, IL: University of Chicago Press.

Bowden, J. A. (2000). The nature of phenomenographic research. In J. A. Bowden & E. Walsh (Eds.), *Phenomenography* (pp. 1–18). Melbourne, VIC: RMIT University Press.

Bowden, J. A. (2005). Reflections on the phenomenographic team research process. In J. A. Bowden & P. Green (Eds.), *Doing developmental phenomenography* (pp. 11–31). Melbourne, VIC: RMIT Publishing.

Bowden, J. A., & Marton, F. (1998). *The university of learning: Beyond quality and competence*. London: Kogan Page.

Bowden, J. A., & Walsh, E. (Eds.). (2000). *Phenomenography*. Melbourne, VIC: RMIT University Press.

Bowers, J., & Parameswaran, A. (2013). Differentiating undergraduate research. *Teaching in Higher Education, 18*(5), 453–464.

Boyer Commission on Educating Undergraduates in the Research University (1998). *Reinventing undergraduate education: A blueprint for America's research universities*. New York: State University of New York–Stony Brook.

Bradley, D., et al. (2008). *Review of Australian higher education: Final report*. Canberra, ACT: DEEWR. Retrieved March 15, 2013, from http://hdl.voced.edu.au/10707/44384

Brandt, C. B., et al. (2013). A theoretical framework for the studio as a learning environment. *International Journal of Technology and Design Education, 23*(2), 329–348.

Bransford, J., Brown, A. L., & Cocking, R. R. (Eds.). (1999). *How people learn: Brain, mind, experience, and school* (Expanded ed.). Washington, DC: National Academy Press.

Brew, A. (2001). *The nature of research: Inquiry in academic contexts*. London: RoutledgeFalmer.

Brew, A. (2013). Understanding the scope of undergraduate research: A framework for curricular and pedagogical decision-making. *Higher Education, 66*(5), 603–618.

Bridgstock, R. S. (2005). Australian artists, starving and well-nourished: What can we learn from the prototypical protean career? *Australian Journal of Career Development, 14*(3), 40–48.

Brocato, K. (2009). Studio based learning: Proposing, critiquing, iterating our way to person-centeredness for better classroom management. *Theory Into Practice, 48*(2), 138–146.

Brockman, J. (1996). *The third culture: Beyond the scientific revolution*. New York: Simon & Schuster.

Brown, R., & Scott, P. (2009). *The role of the market in higher education*. London: Leadership Foundation for Higher Education.

Brubaker, R. (1993). Social theory as habitus. In C. J. Calhoun, E. LiPuma & M. Postone (Eds.), *Bourdieu: Critical perspectives* (pp. 212–234). Cambridge, UK: Polity.

Bruce, C. (1994). Research students' early experiences of the dissertation literature review. *Studies in Higher Education, 19*(2), 217 –229.

Bruce, C. (1997). *The seven faces of information literacy*. Adelaide, SA: Auslib Press.

Bruce, C. (2000). Information literacy research: Dimensions of the emerging collective consciousness. *Australian Academic and Research Libraries, 31*(2), 91–109.

Bruce, C. (2001). Interpreting the scope of their literature reviews: Significant differences in research students' concerns. *New Library World, 102*(4/5), 158–165.

Bruce, C. (2006, December 7–9). *Changing foci and expanding horizons: Some reflections on directions for phenomenography and variation theory*. Paper presented at the EARLI SIG 9: Phenomenography and Variation Theory Workshop, Hong Kong University. Retrieved March 11, 2007, from http://eprints.qut.edu.au/6305/

Bruce, C. (2008). *Informed learning*. Chicago, IL: Association of College and Research Libraries.

Buckland, M. K. (1991). Information as thing. *Journal of the American Society for Information Science, 42*(5), 351–360.

Budd, J. M. (1989). Research in two cultures: The nature of scholarship in science and the humanities. *Collection Management, 11*(3/4), 1–21.

Bundy, A. L. (Ed.). (2004). *Australian and New Zealand information literacy framework: Principles, standards and practice* (2nd ed.). Adelaide, SA: Australian and New Zealand Institute for Information Literacy.

Burbules, N. C. (2008). Tacit teaching. *Educational Philosophy and Theory, 40*(5), 666–677.

Calhoun, C. (2008). Pierre Bourdieu. In G. Ritzer (Ed.), *The Blackwell companion to major contemporary social theorists* (pp. 274–309). Hoboken, NJ: John Wiley.

Callan, V. J., & Bowman, K. (2013). *Issues for VET providers delivering associate and bachelor degrees: Literature review*. Adelaide, SA: NCVER.

Campbell, W. K., & Sedikides, C. (1999). Self-threat magnifies the self-serving bias: A meta-analytic integration. *Review of General Psychology, 3*(1), 23–43.

Candlin, F. (2000). A proper anxiety? Practice-based PhDs and academic unease. *Working Papers in Art and Design, 1*. Retrieved 19 March, 2005, from http://www.herts.ac.uk/research/ssahri/research-areas/art-design/research-into-practice-group/production/working-papers-in-art-and-design-journal

Candy, L. (2006). *Practice based research: A guide*. Sydney, NSW: Creativity & Cognition Studios, UTS. Retrieved June 24, 2011, from www.creativityandcognition.com/.../PBR%20Guide-1.1-2006.pdf

Candy, P., Crebert, G., & O'Leary, J. (1994). *Developing lifelong learners through undergraduate education*. Canberra, ACT: National Board of Employment Education and Training, AGPS.

Carr, K. (2008). *New ERA for research quality: Announcement of Excellence in Research for Australia initiative*. Canberra, ACT: Australian Government. Dept. of Innovation, Industry, Science and Research. Retrieved October 20, 2011, from http://minister.innovation.gov.au/Carr/MediaReleases/Pages/NEWERAFORRESEARCHQUALITY.aspx

Carter, P. (2004). *Material thinking: The theory and practice of creative research*. Carlton, VIC: Melbourne University Publishing.

Castells, M. (2001). Universities as dynamic systems of contradictory functions. In J. Muller, N. Cloete & S. Badat (Eds.), *Challenges of globalisation: South African debates with Manuel Castells* (pp. 206–223). Pinelands, Cape Town: Maskew Miller Longman.

Challener, J. (1999). *Information-seeking behavior of professors of art history and studio art.* Unpublished Master of Library Science, Kent State University, Kent, Ohio.

Chatman, E. A. (1999). A theory of life in the round. *Journal of the American Society for Information Science, 50*(3), 207–217.

Chubb, I. (2000). The impact of the White Paper on universities: Some possibilities. In M. Kiley & G. Mullins (Eds.), *Quality in postgraduate research: Making ends meet. Proceedings of the Quality in Postgraduate Research Conference,* Adelaide, April 13–14 (pp. 15–24). Adelaide, SA: ACUE, University of Adelaide. Retrieved June 10, 2011, from http://qpr.edu.au/

Clark, B. R. (1998). *Creating entrepreneurial universities: Organizational pathways of transformation*. Oxford, UK: Pergamon Press.

Coaldrake, P. (2001). Responding to changing student expectations. *Higher Education Management, 13*(2), 75–92.

Cobbledick, S. (1996). The information-seeking behavior of artists: Exploratory interviews *The Library Quarterly, 66*(4), 343–372.

Collier-Reed, B. I., Ingerman, A., & Berglund, A. (2009). Reflections on trustworthiness in phenomenographic research: Recognising purpose, context and change in the process of research. *Education as Change, 13*(2), 339–355.

Collins, H. M. (2010). *Tacit and explicit knowledge*. Chicago, IL: The University of Chicago Press.

Connell, R. (2006). How to sabotage a PhD. In M. Kiley & G. Mullins (Eds.), *Quality in postgraduate research: Knowledge creation in testing times: Proceedings of the 2006 Quality in Postgraduate Research Conference.* Adelaide, SA, Australia (pp. 27–34). Canberra, ACT: Centre for Educational Development and Academic Methods, The Australian National University.

Connell, R. (2013). The neoliberal cascade and education: An essay on the market agenda and its consequences. *Critical Studies in Education, 54*(2), 99–112.

Council of Australian University Librarians (2001). Information literacy standards. Retrieved April 16, 2012, from http://www.caul.edu.au/caul-programs/information-literacy/publications

Courvisanos, J. (2006). Galbraith and the political economy of technological innovation: Critical perspectives and a heterodox synthesis. In B. Laperche, J. K. Galbraith & D. Uzunidis (Eds.), *Innovation, evolution and economic change: New ideas in the tradition of Galbraith* (pp. 205–228). Cheltenham, UK: Edward Elgar.

Cousin, G. (2009). *Researching learning in higher education: An introduction to contemporary methods and approaches*. New York: Routledge.

Cowan, S. (2004). Informing visual poetry: Information needs and sources of artists. *Art Documentation, 23*(2), 14–20.

Crossley, N. (2003). From reproduction to transformation: Social movement fields and the radical habitus. *Theory, Culture & Society, 20*(6), 43–68.

Csikszentmihalyi, M. (1991). *Flow: The psychology of optimal experience*. New York: Harper Collins.

Cumming, J. (2008). Acknowledging conflict in communities of practice: Case study from doctoral education. In M. Barrow & K. Sutherland (Eds.), *Engaging Communities* (pp. 117–125). Milperra, NSW: HERDSA

Cunningham, S. (2006). *What price a creative economy?* Strawberry Hills, NSW: Currency House.

Cunningham, S., Tapsall, S., Ryan, Y., Stedman, L., Bagdon, K., & Flew, T. (1998). *New media and borderless education: A review of the convergence between global media networks and higher education provision*. Canberra, ACT: DEET.

Curtis, W., et al. (2012). *Learning together and expanding horizons: Reflections on a student—lecturer collaborative enquiry* (Report No. 1756-848X). York, UK: The Higher Education Academy (Student as producer).

Daichendt, G. J. (2009). Redefining the artist teacher. *Art Education, 62*(5), 33–37.

Dale, A. (1997). *Wrestling with a fine woman: The history of postgraduate education in Australia 1851–1993.* PhD thesis, University of Adelaide.

Dally, K., Holbrook, A., Bourke, S., Graham, A., & Lawry, M. (2003). Higher degree examination in fine art. In P. L. Jeffery (Ed.), *AARE Mini-conference 2003: Defining the doctorate*. Melbourne, VIC: AARE. Retrieved June 24, 2011, from http://www.aare.edu.au/conf03nc/index.htm

Dane, W. J. (1987). Public art libraries and artists and designers: A symbiotic scheme for success. *Art Libraries Journal, 12*(3), 29–33.

Daniel, R. (2010). Career development and creative arts students: An investigation into the effectiveness of career theory and WIL experiences on practice. *Australian Journal of Career Development, 19*(2), 14–22.

D'Armour, L. (2008). *An illustrative phenomenographic study: Charting the landscape of "public understanding of science".* Masters dissertation, University of Lethbridge, Alberta.

Davies, P. (2010). Universe from bit. In P. Davies & N. H. Gregersen (Eds.), *Information and the nature of reality: From physics to metaphysics* (pp. 65–91). Cambridge, UK: Cambridge University Press.

Dawkins, J. S. (1987). *Higher education: A policy discussion paper (the green paper)*. Canberra, ACT: DEET.

Dawkins, J. S. (1988). *Higher education: A policy statement*. Canberra, ACT: DEET.

Day, D. V. (2010). The difficulties of learning from experience and the need for deliberate practice. *Industrial and Organizational Psychology, 3*(1), 41–44.

Day, J. M., & McDowell, E. (1985). Information needs and use of art and design students. *Education Libraries Bulletin, 28*(3), 31–41.

De Clercq, D., & Voronov, M. (2009). The role of domination in newcomers' legitimation as entrepreneurs. *Organization, 16*(6), 799–827.

Deer, C. (2008a). Doxa. In M. Grenfell (Ed.), *Pierre Bourdieu: Key concepts* (pp. 119–130). Stocksfield, UK: Acumen.

Deer, C. (2008b). Reflexivity In M. Grenfell (Ed.), *Pierre Bourdieu: Key concepts* (pp. 199–212). Stocksfield, UK: Acumen.

de Freitas, N. (2002). Towards a definition of studio documentation: Working tool and transparent record. *Working Papers in Art and Design,* vol. 2. Retrieved 19 March, 2005, from http://www.herts.ac.uk/research/ssahri/research-areas/art-design/research-into-practice-group/production/working-papers-in-art-and-design-journal

Denning, S. (2001). *The springboard: How storytelling ignites action in knowledge-era organizations*. Boston, MA: Butterworth-Heinemann.

Denzin, N. K. (1994). Romancing the text: The qualitative researcher-writer-as-bricoleur. *Bulletin of the Council for Research in Music Education*(122), 15–30.

Denzin, N. K., & Lincoln, Y. S. (2000). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Sage handbook of qualitative research* (2nd ed., pp. 1–29). Thousand Oaks, CA: Sage Publications.

Denzin, N. K., & Lincoln, Y. S. (2005). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Sage handbook of qualitative research* (3rd ed., pp. 1–32). Thousand Oaks, CA: Sage Publications.

Dervin, B., Foreman-Wernet, L., & Lauterbach, E. (2003). *Sense-making methodology reader: Selected writings of Brenda Dervin*. Cresskill, N.J.: Hampton Press.

Dervin, B., & Nilan, M. (1986). Information needs and uses. *Annual Review of Information Science and Technology, 21*, 3–33.

Downey, M. (1993). *Information-seeking practices of artists in the academic community.* Master of Library Science dissertation, Kent State University, Kent.

Doyle, C. S. (1994). *Information literacy in an information society: A concept for the information age* (Report No. IR-97). Syracuse, NY: Center for Science and Technology, Syracuse University.

Drew, L. (2007). Designing the interface between research, learning and teaching. *Design Research Quarterly, 2*(3), 1, 5–11.

Duguid, P. (2005). The art of knowing: Social and tacit dimensions of knowledge and the limits of the community of practice. *The Information Society, 21*(2), 109–118.

Dunlap, R. E., & McCright, A. M. (2011). Organized climate change denial. In J. S. Dryzek, R. B. Norgaard & D. Schlosberg (Eds.), *The Oxford handbook of climate change and society* (pp. 144–160). Oxford, UK: Oxford University Press.

Eagleton, T. (1992). Doxa and common life: In conversation, Pierre Bourdieu and Terry Eagleton. *New Left Review, 191*, 111–121.

Ecclestone, K. (1996). The reflective practitioner: Mantra or model for emancipation. *Studies in the Education of Adults, 28*(2), 146–161.

Eisenberg, M., & Berkowitz, R. E. (1990). *Information problem-solving: The Big Six Skills approach to library & information skills instruction*. Norwood, NJ: Ablex.

Eisner, E. W. (1998). *The enlightened eye: Qualitative inquiry and the enhancement of educational practice*. New Jersey: Prentice-Hall.

Eisner, E. W. (2006). Does arts-based research have a future? *Studies in Art Education, 48*(1), 9–18.

Elkins, J. (2004). Theoretical remarks on combined creative and scholarly PhD degrees in the visual arts. *Journal of Aesthetic Education, 38*(4), 22–31.

Elkins, J. (Ed.). (2009). *Artists with PhDs: On the new doctoral degree in studio art*. Washington, DC: New Academia Publishing.

Emlyn Jones, T. (2005). The PhD in art & design. *European Journal of Higher Arts Education, 1*. Retrieved June 30, 2011, from http://www.elia-artschools.org/Documents/european-journal-of-higher-arts-education-issue-1-2005?id=34.

English, L. M., Guthrie, J., & Parker, L. D. (2005). Financial management change in Australia: Market expectations. In J. Guthrie, C. Humphrey, O. Olson & L. R. Jones (Eds.), *International public financial management reform: Progress, contradictions, and challenges* (pp. 23–54). Greenwich, CT: Information Age Pub.

Entwistle, N. (1997). Introduction: Phenomenography in higher education. *Higher Education Research and Development, 16*(2), 127–134.

Eraut, M. (1995). Schön Shock: A case for refraining reflection-in-action? *Teachers and Teaching: Theory and Practice, 1*(1), 9–22.

Ericsson, K. A., & Lehmann, A. C. (2011). Expertise. In M. A. Runco & S. Pritzker, R. (Eds.), *Encyclopedia of Creativity* (2nd. ed., pp. 488–496). San Diego, CA: Academic Press.

Etzkowitz, H., & Leydesdorff, L. (1998). The endless transition: A triple helix of university-industry-government relations. *Minerva, 36*(3), 203–208.

Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: From national systems and Mode 2 to a triple helix of university-industry-government relations. *Research Policy, 29*(2), 109–123.

Evans, S., & Le Grice, M. (2001). The state of the art: Research in the practical arts, doctorates, autonomous methodologies. *European Journal of Arts Education, 3*, 105–113.

Evans, T., Macauley, P., Pearson, M., & Tregenza, K. (2003). A brief review of PhDs in creative and performing arts in Australia. In P. L. Jeffery (Ed.), *Defining the doctorate: AARE: Newcastle Mini-conference: Collected papers.* Coldstream, VIC: AARE. Retrieved June 24, 2011, from http://hdl.handle.net/10536/DRO/DU:30004959

Everett, J. E., & Entrekin, L. V. (1994). Changing attitudes of Australian academics. *Higher Education, 27*(2), 203–227.

Fairweather, J. S. (2002). The mythologies of faculty productivity: Implications for institutional policy and decision making. *The Journal of Higher Education,* 73(1), 26–48.

Feldman, K. A. (1987). Research productivity and scholarly accomplishment of college teachers as related to their instructional effectiveness: A review and exploration. *Research in Higher Education, 26*(3), 227–298.

Fenger, M., & Homburg, V. (2011). The studio approach in public administration teaching: Bringing coherence and practice into the curriculum. *Journal of Public Affairs Education, 17*(3), 385–405.

Ferguson, R. (1986). CAA ARLIS joint session: What do artists read? *Art Documentation, 5*(2), 72.

Feyerabend, P. K. (1993). *Against method* (3rd ed.). London: Verso.

Finley, S. (2005). Arts-based inquiry: Performing revolutionary pedagogy. In N. K. Denzin & Y. S. Lincoln (Eds.), *Sage handbook of qualitative research* (3rd ed.) (pp. 681–694). Thousand Oaks, CA: Sage Publications.

Fischer, C. T. (2009). Bracketing in qualitative research: Conceptual and practical matters. *Psychotherapy Research, 19*(4–5), 583–590.

Fitt, M. H., Walker, A. E., & Leary, H. M. (2009, April 13–17). *Assessing the quality of doctoral dissertation literature reviews in instructional technology*. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.

Floridi, L. (2011). *The philosophy of information*. Oxford, UK: Oxford University Press.

Foster, A. (2006). A non-linear perspective on information seeking. In A. Spink & C. Cole (Eds.), *New directions in human information behavior* (pp. 155–170). Dordrecht, Netherlands: Springer.

Foster, S. (1993). Information literacy: Some misgivings. *American Libraries, 24*(4), 344–346.

Francis, H. (1993). Advancing phenomenography: Questions of method. *Nordisk Pedagogik, 13*(2), 68–75.

Frank, P. (1999). Student artists in the library: An investigation of how they use general academic libraries for their creative needs. *Journal of Academic Librarianship, 25*(6), 445–455.

Frankham, N. (2006). Attitudes and trends in Australian art and design schools. In S. Baker & S. Fereday (Eds.), *Thinking the future: Art, design and creativity. ACUADS 2006 Conference*. Southbank, VIC: ACUADS. Retrieved August 9, 2008, from http://www.acuads.com.au/conf2006/papers_refereed/frankham.pdf

Frayling, C. (1993/4). Research in art and design. *Royal College of Art Research Papers, 1*(1), 1–5.

Froehlich, J. C. M. (2011). *Organizational performance improvement In higher education student affairs: A phenomenographic study.* PhD thesis, University of Minnesota.

Funtowicz, S. O., & Ravetz, J. R. (1993). Science for the post-normal age. *Futures, 25*(7), 739–755.

Gallagher, M. (2000). The challenges facing higher education research training. In M. Kiley & G. Mullins (Eds.), *Quality in postgraduate research: Making ends meet. Proceedings of the Quality in Postgraduate Research Conference* (pp. 9–14). Adelaide, SA: ACUE, University of Adelaide. Retrieved June 10, 2011, from http://qpr.edu.au/

Gascoigne, N., & Thornton, T. (2012). *Tacit knowledge*. Durham, UK: Acumen.

Gasper, K. (2003). When necessity is the mother of invention: Mood and problem solving. *Journal of Experimental Social Psychology, 39*(3), 248–262.

Gelwick, R. (1977). *The way of discovery: An introduction to the thought of Michael Polanyi*. New York: Oxford University Press.

Gendron, H. (2009). Don't fence me in! Reconsidering the role of the librarian in a global age of art and design research. *Art Libraries Journal, 34*(2), 26–30.

Gerholm, T. (1990). On tacit knowledge in academia. *European Journal of Education, 25*(3), 263–271.

Gibbons, M., Linmoges, C., Nowotny, H., Schwartzman, S., Scott, P., & Trow, M. (1994). *The new production of knowledge: The dynamics of science and research in contemporary societies*. London: Sage.

Gilbert, R. (2009). The doctorate as curriculum: A perspective on goals and outcomes of doctoral education. In D. Boud & A. Lee (Eds.), *Changing practices of doctoral education* (pp. 54–68). London: Routledge.

Gill, J. H. (1993). *Learning to learn: Toward a philosophy of education*. Atlantic Highlands, NJ: Humanities Press.

Gill, J. H. (2000). *The tacit mode: Michael Polanyi's postmodern philosophy*. New York: Albany State University of New York Press.

Gillies, M. (2004). The creative arts and national research priorities. In R. Wissler, B. Haseman, S.A. Wallace & M. Keane (Eds.), *Innovation in Australian arts, media, design: Fresh challenges for the tertiary sector* (pp. 207–220). Flaxton, QLD: Post Pressed.

Giorgi, A. (1999). A phenomenological perspective on some phenomenographic results on learning. *Journal of Phenomenological Psychology, 30*(2), 68–93.

Goodrum, A., A. (2005). I can't tell you what I want, but I'll know it when I see it: Terminological disconnects in digital image reference. *Reference & User Services Quarterly, 45*(1), 46–53.

Gopaul, B. (2011). Distinction in doctoral education: Using Bourdieu's tools to assess the socialization of doctoral students. *Equity & Excellence in Education, 44*(1), 10–21.

Gosling, V. K., & Crawford, G. (2011). Game scenes: Theorizing digital game audiences. *Games and Culture, 6*(2), 135-154.

Gray, C. (1998). Inquiry through practice: Developing appropriate research strategies in art and design. In P. Strandman (Ed.), *No guru no method: Discussion on art and design research* (pp. 82–95). Helsinki, Finland: University of Art and Design.

Green, L. (2006). Research outputs in the creative and performing arts: Australianising an international debate. *Media International Australia, Incorporating Culture & Policy, 118*, 5–1

Green, L. (2007, April 20). *Recognising practice-led research … at last!* Paper presented at the Hatched 07 Arts Research Symposium, Perth Institute of Contemporary Art. Retrieved June 24, 2011, from http://www.pica.org.au/downloads/97/L_Green.pdf

Green, P. (2005). A rigorous journey into phenomenography: From a naturalistic inquirer standpoint. In J. A. Bowden & P. Green (Eds.), *Doing developmental phenomenography* (pp. 32–46). Melbourne, VIC: RMIT Publishing.

Green, W., Hammer, S., & Star, C. (2009). Facing up to the challenge: Why is it so hard to develop graduate attributes. *Higher Education Research & Development, 28*(1), 17–29.

Greenberg, S. (2007). *Embedding a design studio course in a conventional computer science program* (Report No. 2007-870-22). Alberta, Canada: Department of Computer Science, University of Calgary.

Greene, M. (1973). *Teacher as stranger: Educational philosophy for the modern age*. Belmont, CA: Wadsworth Pub. Co.

Gregory, T. R. (2007). Under-served or under-surveyed: The information needs of studio art faculty in the Southwestern United States. *Art Documentation, 26*(2), 57–66.

Grene, M. (Ed.). (1969). *Knowing and being: Essays by Michael Polanyi*. London: Routledge & Kegan Paul.

Grenfell, M. (2008). Interest. In M. Grenfell (Ed.), *Pierre Bourdieu: Key concepts* (pp. 153–170). Stocksfield, UK: Acumen.

Griffiths, R. (2004). Knowledge production and the research-teaching nexus: The case of the built environment disciplines. *Studies in Higher Education, 29*(6), 709–726.

Grunig, S. D. (1997). Research, reputation, and resources: The effect of research activity on perceptions of undergraduate education and institutional resource acquisition. *The Journal of Higher Education*, 68(1), 17–52.

Guthrie, J., & Neumann, R. (2007). Economic and non-financial performance indicators in universities. *Public Management Review*, 9(2), 231–252.

Halpern, D. F. (2003). Thinking critically about creative thinking. In M. A. Runco (Ed.), *Critical creative processes* (pp. 189–207). Cresskill, NJ: Hampton Press.

Halverson, A. (2008). Confronting information literacy in an academic arts library. *Art Documentation, 27*(2), 34–38.

Hanrahan, S. (2005). The fruit of anxious intercourse. *European Journal of Higher Arts Education, 1*. Retrieved June 30, 2010, from http://www.elia-artschools.org/Documents/european-journal-of-higher-arts-education-issue-1-2005?id=34

Hare, J. (2013, June 19). Failed student sues for refund Southern Cross Business School `educationally defective' *The Australian,* p. 29.

Harman, G. (2009). Australia's experiment: Tuition fees, student loans and university income generation. In J. A. Douglass, C. J. King & I. Feller (Eds.), *Globalization's muse: Universities and higher education systems in a changing world* (pp. 93–110). Berkeley, CA: Public Policy Press.

Harman, K. (2002). Merging divergent campus cultures into coherent educational communities: Challenges for higher education leaders. *Higher Education, 44*(1), 91–114.

Harris, L. R. (2011). Phenomenographic perspectives on the structure of conceptions: The origins, purposes, strengths, and limitations of the what/how and referential/structural frameworks. *Educational Research Review, 6*(2), 109–124.

Harth, E. (1995). *The creative loop: How the brain makes a mind*. London: Penguin.

Hartley, J., & Cunningham, S. (2002). Creative industries: From Blue Poles to fat pipes (Case Study 1). In M. Gillies, M. Carroll & J. Dash (Eds.), *Humanities and social sciences futures: Papers from the National Humanities and Social Sciences Summit held in July 2001*. Canberra, ACT: DEST. Retrieved June 24, 2011, from http://www.dest.gov.au/NR/rdonlyres/C785B22C.../summit701.pdf

Haseman, B. (2006). A manifesto for performative research. *Media International Australia, Incorporating Culture & Policy*(118), 98–106.

Hasselgren, B., & Beach, D. (1996). *Phenomenography–a good for nothing brother of phenomenology? or Phenomenography is what phenomenographers do when doing phenomenography. Department of Education and Educational Research Report,* (No. 1996:05). Sweden, Göteborg University.

Hasselgren, B., & Beach, D. (1997). Phenomenography–a good for nothing brother of phenomenology? Outline of an analysis. *Higher Education Research & Development, 16*(2), 191–202.

Hattie, J., & Marsh, H. W. (1996). The relationship between research and teaching: A meta-analysis. *Review of Educational Research, 66*(4), 507–542.

Healy, G. (2006a). Universities race for intellectual firepower [The international competition for world-class researchers and its impact on Australian university budgets]. *Campus Review (Paddington, NSW), 16*(27), 8–9.

Healy, G. (2006b). On the agenda: [Chief Scientist Dr Jim Peacock discusses the state of play on the Research Qualification Framework and the national research priorities .]. *Campus Review (Paddington, NSW), 16*(38), 3.

Healey, M., & Jenkins, A. (2009). *Developing undergraduate research and inquiry*. York, UK: The Higher Education Academy.

Healey, M., et al. (2010). The research–teaching nexus: A case study of students' awareness, experiences and perceptions of research. *Innovations in Education and Teaching International, 47*(2), 235–246.

Helms, L. (2009). Comparing litigation in higher education: The United States and Australia in 2007. *International Journal of Law and Education*, 14(2), 37–61.

Hemmig, W. S. (2008). The information-seeking behavior of visual artists: A literature review. *Journal of Documentation, 64*(3), 343–362.

Hemmig, W. S. (2009). An empirical study of the information-seeking behavior of practicing visual artists. *Journal of Documentation, 65*(4), 682–703.

Henkel, M. (2000). *Academic identities and policy change in higher education*. London: Jessica Kingsley.

Hessels, L. K., & Van Lente, H. (2008). Re-thinking new knowledge production: A literature review and a research agenda. *Research Policy, 37*(4), 740–760.

Higgs, J. (1997). The context of qualitative research. In J. Higgs (Ed.), *Qualitative research: Discourse on methodologies* (pp. 2–12). Sydney, NSW: Hampden Press.

Hinds, P. J. (1999). The curse of expertise: The effects of expertise and debiasing methods on prediction of novice performance. *Journal of Experimental Psychology: Applied, 5*(2), 205–221.

Hirt, E. R., Devers, E. E., & McCrea, S. M. (2008). I want to be creative: Exploring the role of hedonic contingency theory in the positive mood-cognitive flexibility link. *Journal of Personality & Social Psychology, 94*(2), 214–230.

Hockey, J. (2003). Practice-based research degree students in art and design: Identity and adaptation. *International Journal of Art & Design Education, 22*(1), 82–91.

Hockey, J. (2007). United Kingdom art and design practice-based PhDs: Evidence from students and their supervisors. *Studies in Art Education, 48*(2), 155–171.

Hockey, J., & Allen-Collinson, J. (2000). The supervision of practice-based research degrees in art and design. *International Journal of Art and Design Education, 19*(3), 345–355.

Hockey, J., & Allen-Collinson, J. (2005). Identity change: Doctoral students in art and design. *Arts and Humanities in Higher Education, 4*(1), 77–93.

Holbrook, A., et al. (2007). Examiner comment on the literature review in Ph.D. theses. *Studies in Higher Education, 32*(3), 337–356.

Holyoak, K. J., & Thagard, P. (1995). *Mental leaps: Analogy in creative thought*. Cambridge, MA: MIT Press.

Hounsell, D. (2002). Does research benefit teaching? And how can we know? *Exchange* 3, 6–7.

Hughes, H. E. (2009). *International students using online information resources to learn.* PhD thesis, Queensland University of Technology, Brisbane.

Jacobs, C. (2007). Towards a critical understanding of the teaching of discipline-specific academic literacies: Making the tacit explicit. *Journal of Education, 41*, 59–81.

James, D. (2011). Beginning with Bourdieu in educational research. British Educational Research Association on-line resource. Retrieved March 19, 2013, from http://www.bera.ac.uk/resources/beginning-bourdieu-educational-research

Jarvis, P. (1999). *The practitioner-researcher: Developing theory from practice*. San Francisco, CA: Jossey-Bass.

Jha, S. R. (2002). *Reconsidering Michael Polanyi's philosophy*. Pittsburgh, PA: University of Pittsburgh Press.

Jones, A. (1991a). Books in artists' lives. *Arts Magazine, 65*(5), 21–22.

Jones, A. (1991b). Books in artists' lives, Part II. *Arts Magazine, 65*(6), 25–26.

Justice, C., et al. (2009). Inquiry-based learning in higher education: Administrators' perspectives on integrating inquiry pedagogy into the curriculum. *Higher Education, 58*(6), 841–855.

Kalvemark, T. (2011). University politics and practice-based research. In M. Biggs & H. Karlsson (Eds.), *The Routledge companion to research in the arts* (pp. 3–23). London: Routledge.

Kamvounias, P., & Varnham, S. (2006). Getting what they paid for: Consumer rights of students in higher education. *Griffith Law Review, 15*(2), 306–332.

Kamvounias, P., & Varnham, S. (2010). Legal challenges to university decisions affecting students in Australian courts and tribunals. *Melbourne University Law Review,* 34, 140–180.

Kapitzke, C. (2003a). Information literacy: A positivist epistemology and a politics of ourtformation. *Educational Theory, 53*(1), 37–53.

Kapitzke, C. (2003b). Information literacy: A review and poststructural critique. *Australian Journal of Language and Literacy, 26*(1), 53–66.

Kari, J., & Savolainen, R. (2003). Towards a contextual model of information seeking on the Web. *The New Review of Information Behaviour Research, 4*(1), 155–175.

Keinonen, T. (2006). Fields and acts of art and research. In M. Makela & S. Routarinne (Eds.), *The art of research: Research practices in art and design* (pp. 40–59). Helinski, Finland: University of Art and Design, Helinski.

Kemp, D. A. (1999). *Knowledge and innovation: A policy statement on research and research training*. Canberra, ACT: Dept. of Education, Training and Youth Affairs.

Keohane, N. O. (2006). *Higher ground: Ethics and leadership in the modern university*. Durham: Duke University Press.

Kessler, J. (2009). Alumna sues college because she hasn't found a job. *CNN International*. Retrieved March 24, 2014, from http://edition.cnn.com/2009/US/08/03/new.york.jobless.graduate/

Kincheloe, J. L., & Berry, K. S. (2004). *Rigour and complexity in educational research*. Maidenhead, UK: McGraw-Hill.

King, R. (2004). Globalization and the university. In R. King (Ed.), *The University in the global age* (pp. 45–66). Hampshire: Palgrave Macmillan.

Kinkead, J. (2003). Learning through inquiry: An overview of undergraduate research. *New Directions for Teaching and Learning,* (93), 5–18.

Koopmans, H. (2009). *Use of the Web by visual artists: An exploration of how online information seeking informs creative practice.* Masters dissertation, University of North Carolina at Chapel Hill.

Kuhlthau, C. C. (1993). *Seeking meaning: A process approach to library and information services*. Norwood, NJ: Ablex.

Kupers, W. (2005). Phenomenology of embodied implicit and narrative knowing. *Journal of Knowledge Management, 9*(6), 114–133.

Kvale, S. (1995). The social construction of validity. *Qualitative Inquiry, 1*(1), 19–40.

Kvale, S. (2006). Dominance through interviews and dialogues. *Qualitative Inquiry, 12*(3), 480–500.

Langrish, J. (2000). Not everything made of steel is a battleship. In D. Durling & K. Friedman (Eds.), *Doctoral education in design: Foundations for the future. Proceedings of the conference held 8–12 July, La Clusaz, France* (pp. 297–306). Stoke-on-Trent, UK: Staffordshire University Press.

Lapadat, J. C., & Lindsay, A. C. (1999). Transcription in research and practice: From standardization of technique to interpretive positionings. *Qualitative Inquiry, 5*(1), 64–86.

Latour, B., & Woolgar, S. (1986). *Laboratory life: The construction of scientific facts* (2nd. ed.). Princeton, NJ: Princeton University Press.

Laudel, G. (2006). The “quality myth”: Promoting and hindering conditions for acquiring research funds. *Higher Education*, 52(3), 375–403.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge, UK: Cambridge University Press.

Layne, S. S. (1994). Artists, art historians and visual art information. *The Reference Librarian, 47*, 23–36.

Lee, C. J. G. (2012). Reconsidering constructivism in qualitative research. *Educational Philosophy and Theory, 44*(4), 403–412.

Leung, C. M., Stokes, M. J., & Bradbeer, R. (1996, July 3–5). *An integrated teaching studio at the City University of Hong Kong*. Paper presented at the IEEE International Conference on Multi Media Engineering Education, Melbourne, VIC.

Levine, A. (1999). How the academic profession is changing. In B. A. Pescosolido & R. Aminzade (Eds.), *The social worlds of higher education: Handbook for teaching in a new century* (pp. 42–53). Thousand Oaks, CA: Pine Forge Press.

Levi-Strauss, C. (1972). *The savage mind*. London: Weidenfeld and Nicolson.

Levy, P., & Petrulis, R. (2011). How do first-year university students experience inquiry and research, and what are the implications for the practice of inquiry-based learning? *Studies in Higher Education, 37*(1), 85–101.

Lewis, P. (2012). In defence of Aristotle on character: Toward a synthesis of recent psychology, neuroscience and the thought of Michael Polanyi. *Journal of Moral Education, 41*(2), 155–170.

Leydesdorff, L., & Meyer, M. (2006). Triple helix indicators of knowledge-based innovation systems: Introduction to the special issue. *Research Policy, 35*(10), 1441–1449.

Limberg, L., Sundin, O., & Talja, S. (2012). Three theoretical perspectives on information literacy. *Human IT, 11*(2), 93–130.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage Publications.

Linde, C. (2001). Narrative and social tacit knowledge. *Journal of Knowledge Management, 5*(2), 160–171.

Lindholm, J. A. (2004). Pathways to the professoriate: The role of self, others, and environment in shaping academic career aspirations. *The Journal of Higher Education, 75*(6), 603–635.

Lipstadt, H. (2003). Can “art professions” be Bourdieuean fields of cultural production? The case of the architecture competition. *Cultural Studies, 17*(3–4), 390–419.

Little, L., & Peter, H. (1990). *Motivation and performance of older Australian academics: A pilot study*. Canberra, ACT: Australian Government Publishing Service.

Littrell, L. (2001). Artists: The neglected patrons? In H. A. Thompson (Ed.), *Crossing the divide: Proceedings of the Tenth National Conference of the Association of College and Research Libraries, March 15–18, 2001,* Denver, Colorado (pp. 291–294). Chicago, IL: ACRL.

Lloyd, A. (2004). Working (in) formation: conceptualizing information literacy in the workplace. In P. A. Danaher, C. Macpherson, F. Nouwens & D. Orr (Eds.), *Lifelong learning: Whose responsibility and what is your contribution? : Proceedings of the 3rd International lifelong learning conference, Yeppoon, Queensland, Australia, 13–16 June* (pp. 218–224). Rockhampton, QLD: Central Queensland University Press.

Lloyd, A. (2006). Information literacy landscapes: An emerging picture *Journal of Documentation, 62*(5), 570–583.

Lloyd, A. (2009). Informing practice: Information experiences of ambulance officers in training and on-road practice. *Journal of Documentation, 65*(3), 396–419.

Lloyd, A. (2010). *Information literacy landscapes: information literacy in education, workplace and everyday contexts*. Oxford: Chandos.

Lupton, M. (2004). *The learning connection: Information literacy and the student experience*. Adelaide: Auslib Press.

Lupton, M. (2008). *Information literacy and learning.* PhD thesis, Queensland University of Technology, Brisbane.

Luzeckyj, A. (2009). Games played on Australian university alliance websites as they collaborate and compete. In P. L. Jeffrey (Ed.), *AARE 2009 International Education*

Research Conference, Canberra, ACT 29 November–3 December 2009 (pp. 1–14). Melbourne, VIC: Australian Association for Research in Education.

Lyle, K. S., & Robinson, W. R. (2002). A phenomenographic study: First year chemical engineering students' conceptions of energy in dissolution processes. *Journal of Chemical Education, 79*(10), 1189–1191.

Lynch, K., et al. (2002). A studio-based approach to teaching information technology. In A. McDougall, J. Murnane & D. Chambers (Eds.), *CRPT '02 Proceedings of the Seventh World Conference on Computers in Education: Australian topics* (Vol. 8, pp. 75–79). Darlinghurst, Sydney: Australian Computer Society. Retrieved August 18, 2008, from http://portal.acm.org/citation.cfm?id=820075

Lyotard, J. F. (1984). *The postmodern condition: A report on knowledge*. Minneapolis, MN: University of Minnesota Press.

Mahony, D. (1992). Establishing the university as the sole provider of higher education: The Australian experience. *Studies in Higher Education, 17*(2), 219–236.

Mahony, D. (1993). The construction and challenges of Australia's post-binary system of higher education. *Oxford Review of Education, 19*(4), 465–483.

Mahony, D. (1994). Counter images of Australia's movement to an undifferentiated higher education system: An analysis. *Higher Education, 28*(3), 301–323.

Mahony, D. (1995). Academics in an era of structural change: An Australian experience. *Higher Education Research & Development, 14*(1), 87–105.

Mahy, I., & Zahedi, M. (2010, July 7–9). *When artists and designers inspire collective intelligence practices: Two case studies of collaboration, interdisciplinarity, and innovation projects*. Paper presented at the Design & Complexity Conference, Montreal. Retrieved July 20, 2011, from http://www.designresearchsociety.org/docs-procs/DRS2010/PDF/078.pdf.

Makela, M., & Routarinne, S. (Eds.). (2006). *The art of research: Research practices in art and design*. Helinski, Finland: University of Art and Design, Helinski.

Malachowski, M. R. (2003). A research-across-the-curriculum movement. *New Directions for Teaching and Learning,* (93), 55–68.

Mareis, C. (2012). The epistemology of the unspoken: On the concept of tacit knowledge in contemporary design research. *Design Issues, 28*(2), 61–71.

Marginson, S. (2013). The impossibility of capitalist markets in higher education. *Journal of Education Policy, 28*(3), 353–370.

Markless, S. (2009). A new conception of information literacy for the digital learning environment in higher education. *Nordic Journal of Information Literacy in Higher Education, 1*(1), 25-40.

Markusen, A., et al. (2006). *Crossover: How artists build careers across commercial, nonprofit and community work. The Arts Economy Initiative Project on Regional and Industrial Economics.* Minneapolis, MN: Humphrey Institute of Public Affairs, University of Minnesota.

Marsh, H., et al. (2012). A new era for research education in Australia. *Australian Universities' Review, 54*(1), 83–93.

Marsh, H. W., & Hattie, J. (2002). The relation between research productivity and teaching effectiveness: Complementary, antagonistic, or independent constructs? *The Journal of Higher Education, 73*(5), 603–641.

Martínková, I., & Parry, J. (2011). An introduction to the phenomenological study of sport. *Sport, Ethics and Philosophy, 5*(3), 185–201.

Marton, F. (1981). Phenomenography–Describing conceptions of the world around us. *Instructional Science, 10*(2), 177–200.

Marton, F. (1986). Phenomenography: A research approach to investigating different understandings of reality. *Journal of Thought, 21*(3), 28–49.

Marton, F. (1992). Phenomenography and the art of teaching all things to all men. *Qualitative studies in education, 5*(3), 253–267.

Marton, F. (1995). Cognosco ergo sum: Reflections on reflections. *Journal of Nordic Educational Research, 15*(3), 165–180.

Marton, F. (2000). The structure of awareness. In J. A. Bowden & E. Walsh (Eds.), *Phenomenography* (pp. 102–116). Melbourne, VIC: RMIT University Press.

Marton, F., & Booth, S. (1997). *Learning and awareness*. Mahwah, NJ: L. Erlbaum Associates.

Marton, F., & Neuman, D. (1989). Constructivism and constitutionalism. Some implications for elementary mathematics education. *Scandinavian Journal of Educational Research, 33*(1), 35–46.

Marton, F., & Pong, W. Y. (2005). On the unit of description in phenomenography. *Higher Education Research & Development, 24*(4), 335–348.

Marton, F., & Tsui, A. (Eds.). (2004). *Classroom discourse and the space of learning*. Mahwah, NJ: L. Erlbaum Associates.

Mason, H., & Robinson, L. (2011). The information-related behaviour of emerging artists and designers. *Journal of Documentation, 67*(1), 159–180.

Massachusetts Institute of Technology (n.d.). UROP. Retrieved May 20, 2014, from http://web.mit.edu/urop/

Mathewson, D. (2003). Reconceptualising the role of art educators in their engagements with art museums. In P. L. Jeffery (Ed.), *Defining the doctorate: AARE: Newcastle Mini-conference: Collected papers.* Coldstream, VIC: AARE. Retrieved June 24, 2011, from http://www.aare.edu.au/conf03nc/alpha.htm.

Maton, K. (2008). Habitus. In M. Grenfell (Ed.), *Pierre Bourdieu: Key concepts* (pp. 49–66). Stocksfield, UK: Acumen.

Maybee, C., et al. (2013). Learning to use information: Informed learning in the undergraduate classroom. *Library & Information Science Research, 35*(3), 200-206.

Mayer, E. (1992). *Key competencies: Report of the Committee to advise the Australian Education Council and Ministers of Vocational Education, Employment and Training on*

employment-related key competencies for postcompulsory education and training. Canberra, ACT: AEC & MVEET. Retrieved May 6, 2012, from http://www.voced.edu.au/content/ngv28045

Mayer, J. (2010). Embedding information literacy into a studio art course. In A. Gluibizzi & P. Glassman (Eds.), *Handbook of art and design librarianship for higher education* (pp. 145–158). London: Facet.

McCowan, C., & Wyganowska, J. (2008). Gathering the real data from creative industries graduates one year out. *Australian Journal of Career Development, 17*(1), 29–39.

McGlashan, A. A. (2011). Designer stories: A commentary on the community of design practice. *International Journal of Technology and Design Education, 21*(2), 235–260.

McGregor, S. L. T. (2004). *The nature of transdisciplinary research and practice*. East Lansing, MI: Kappa Omicron Nu. Retrieved January 20, 2012, from http://www.kon.org/hswp/archive/transdiscipl.html

McInnis, C. (1996). Change and diversity in the work patterns of Australian academics. *Higher Education Management, 8*(2), 105–117.

McLaughlin, C. (2003). The feeling of finding out: The role of emotions in research. *Educational Action Research, 11*(1), 65–78.

McLaughlin, J. (2008). *Information use by visual artists.* Masters dissertation, Dalhousie University (Canada).

McNiff, S. (1998). *Art-based research* London: Jessica Kingsley.

McWilliam, E., Hearn, G., & Haseman, B. (2008). Transdisciplinarity for creative futures: What barriers and opportunities? *Innovations in Education and Teaching International, 45*(3), 247–253.

Meadows, M. (2011). The meaning of life: Journalism research and ERA 2010. *Australian Journalism Review, 33*(1), 9–15.

Medaille, A. (2010). Creativity and craft: The information-seeking behavior of theatre artists. *Journal of Documentation, 66*(3), 327–337.

Meek, V. L. (1991). The transformation of Australian higher education from binary to unitary system. *Higher Education, 21*(4), 461–494.

Melleuish, G. (2011). Bureaucracy is crushing the intellectual life out of us. *The Spectator Australia*, April 5. Retrieved April 19, 2011, from http://www.spectator.co.uk/author/greg-melleuish/

Menger, P.-M. (1999). Artistic labour markets and careers. *Annual Review of Sociology*, 25(1), 541–574.

Merkel, C. A. (2003). Undergraduate research at the research universities. *New Directions for Teaching and Learning,* (93), 39–54.

Mingers, J., & Willmott, H. (2010). *Moulding the one-dimensional academic: The performative effects of journal ranking lists* (Working Paper No. 239). Canterbury, UK: Kent Business School.

Misner, C. W., Thorne, K. S., & Zurek, W. H. (2009). John Wheeler, relativity, and quantum information. *Physics Today, 62*(4), 40–46.

Mitchell, M. T. (2006). *Michael Polanyi: The art of knowing*. Wilmington, Del.: ISI Books.

Mockridge, A., et al. (2009). *The graduate pledge: King's College–Warwick project*. Coventry, UK: Reinvention Centre for Undergraduate Research, University of Warwick.

Moilanen, P. (2000). Interpretation, truth and correspondence. *Journal for the Theory of Social Behaviour, 30*(4), 377–390.

Molesworth, M., Nixon, E., & Scullion, R. (2009). Having, being and higher education: The marketisation of the university and the transformation of the student into consumer. *Teaching in Higher Education, 14*(3), 277–287.

Moline, K., & Clarke, K. (2007). Exhibitions as interfaces between practice and research. In S. Baker, I. Howard & C. Rhodes (Eds.), *Innovation, leadership, impact: ACUADS 2007*

Conference. Southbank, Melbourne, VIC: ACUADS. Retrieved June 24, 2011, from http://handle.unsw.edu.au/1959.4/40217

Moore, R. (2008). Capital. In M. Grenfell (Ed.), *Pierre Bourdieu: Key concepts* (pp. 101–117). Stocksfield, UK: Acumen.

Moore, R. (2009). *Towards the sociology of truth*. New York: Continuum International Pub. Group.

Morgan, S. J. (2001). A terminal degree: Fine art and the PhD. *Journal of Visual Art Practice, 1*(1), 6–15.

Morrow, S. L. (2005). Quality and trustworthiness in qualitative research in counseling psychology. *Journal of Counseling Psychology, 52*(2), 250–260.

Moses, I., & Ramsden, P. (1993). Academics and academic work in colleges of advanced education and universities. In G. S. Harman & V. L. Meek (Eds.), *The binary experiment for higher education: An Australian perspective* (pp. 85–98). Armidale, NSW: Dept. of Administrative, Higher and Adult Education Studies, University of New England.

Moss, E. (1995). *The grammar of consciousness: An exploration of tacit knowing*. New York: St. Martin's Press.

Mottram, J. (2009). Researching research in art and design. In J. Elkins (Ed.), *Artists with PhDs: On the new doctoral degree in studio art* (pp. 3–30). Washington, DC: New Academia Publishing.

Moustakas, C. E. (1990). *Heuristic research: Design, methodology, and applications*. Newbury Park: Sage Publications.

Murphy, P., Peters, M. A., & Marginson, S. (2010). *Imagination: Three models of imagination in the age of the knowledge economy*. New York: Peter Lang.

Naidoo, R. (2005). Universities in the marketplace: The distortion of teaching and research. In R. Barnett (Ed.), *Reshaping the university: New relationships between research, scholarship and teaching* (pp. 27–36). Maidenhead, UK: Open University Press.

Nathan, M. J., & Petrosino, A. (2003). Expert blind spot among preservice teachers. *American Educational Research Journal, 40*(4), 905–928.

National Health and Medical Research Council, Australian Research Council, & Universities Australia (2007). *Revision of the Joint NHMRC/AVCC statement and guidelines on research practice: Australian code for the responsible conduct of research*. Canberra, ACT: Australian Government.

NCLIS, NFIL, & UNESCO (2003). *The Prague declaration: Towards an information literate society: Report on the Information Literacy Meeting of Experts*. Prague. Retrieved April 18, 2012, from www.caul.edu.au/content/upload/files/info.../PragueDeclaration.pdf.

Neary, M. (2010). Student as producer: A pedagogy for the avant-garde; or, how do revolutionary teachers teach? *Learning Exchange, 1*(1), 1–17.

Neary, M., & Winn, J. (2009). The student as producer: Reinventing the student experience in higher education. In L. Bell, M. Neary & H. Stevenson (Eds.), *The future of higher education: Policy, pedagogy and the student experience* (pp. 126–138). London: Continuum.

Neave, G. (1998). The evaluative state reconsidered. *European Journal of Education*, 33(3), 265–284.

Nelson, R. (2009). *The jealousy of ideas: Research methods in the creative arts*. Fitzroy, VIC: Ellikon & Writing-Pad.

Neuman, D. (1987). *The origin of arithmetic skills: A phenomenographic approach.* PhD thesis, University of Goteborg, Goteborg, Sweden.

Neumann, R. (2002). Diversity, doctoral education and policy. *Higher Education Research & Development, 21*(2), 167–178.

Neumann, R. (2007). Policy and practice in doctoral education. *Studies in Higher Education, 32*(4), 459–473.

Newbury, D. (1996). Viewpoint: Knowledge and research in art and design. *Design Studies, 17*(2), 215–219.

Nicolescu, B. (2002). A new vision of the world–Transdisciplinarity. In K. Siune (Co-ordinator), *The design and delivery of inter- and pluri-disciplinary research: Proceedings from MUSCIPOLI Workshop Two* (pp. 108–112). Aarhus, Denmark: The Danish Institute for Studies in Research and Research Policy.

Nilsen, M. (1986). Client-centred services in a branch library. *Art Documentation, 5*(4), 151–153.

Noble, K. A. (1994). *Changing doctoral degrees: An international perspective*. Buckingham, UK: SRHE & Open University Press.

Nowotny, H. (2011). Foreword. In M. Biggs & H. Karlsson (Eds.), *The Routledge companion to research in the arts* (pp. xvii–xxvi). London: Routledge.

Nowotny, H., Scott, P., & Gibbons, M. (2003). Introduction: "Mode 2" revisited: The new production of knowledge. *Minerva, 41*(3), 179–194.

Oakeshott, M. (1962). *Rationalism in politics and other essays*. London: Methuen.

O'Connor, J. (2011). *Arts and creative industries: A historical overview and an Australian conversation*. Sydney: Australia Council for the Arts.

Oddos, J.P. (1998). "Un fantome dans votre bibliotheque: l'artiste face à la bibliotheque d'art, du besoin d'information au besoin de reconnaissance" (A ghost in your library: The artist's relationship with the art library from the need for information to the need for recognition). *Art Libraries Journal, 23*(1), 13–21.

Oguz, F., & Sengun, A. E. (2011). Mystery of the unknown: Revisiting tacit knowledge in the organizational literature. *Journal of Knowledge Management, 15*(3), 445–461.

Onsman, A. (2008). Tempering universities' marketing rhetoric: A strategic protection against litigation or an admission of failure? *Journal of Higher Education Policy and Management,* 30(1), 77–85.

Opdahl, O. (1986). Artists on libraries 3. *Art Libraries Journal, 11*(3), 13.

Ordorika, I. (2009). Commitment to society: Contemporary challenges for public research universities. In Global University Network for Innovation (Ed.), *Higher education at a time of transformation: New dynamics for social responsibility* (pp. 72–74). Basingstoke, UK: GUNI and Palgrave Macmillan.

Orgill, M. (2007). Phenomenography. In G. M. Bodner & M. Orgill (Eds.), *Theoretical frameworks for research in chemistry/science education* (pp. 132–151). Upper Saddle River, NJ: Pearson Prentice Hall.

Orgill, M. (2008). Phenomenography. Retrieved January 13, 2013, from http://www.minds.may.ie/~dez/phenom.html.

Orlikowski, W. J., & Baroudi, J. J. (1991). Studying information technology in organizations: Research approaches and assumptions. *Information Systems Research, 2*(1), 1–28.

Osborne, D., & Gaebler, T. (1992). *Reinventing government: How the entrepreneurial spirit is transforming the public sector*. Reading, MS: Addison-Wesley.

Osterloh, M., & Frey, B. S. (2009). *Research governance in academia: Are there alternatives to academic rankings?* (Working Paper No. 423). Zurich: Institute for Empirical Research in Economics, University of Zurich.

Osterlund, C., & Carlile, P. (2003). How practice matters: A relational view of knowledge sharing. In M. H. Huysman, E. Wenger & V. Wulf (Eds.), *Proceedings of the First International Conference on Communities and Technologies* (pp. 1–22). Bonn, Germany: IISI. Retrieved January 20, 2013, from http://www.iisi.de/en/international-conferences-on-communities-and-technologies/c-t-2003-proceedings/.

Pacey, P. (1982). How art students use libraries–if they do. *Art Libraries Journal, 7*(1), 33–38.

Page, M. G. (1997). Forbidden knowledge: The research process in a further education setting. *Research in Post-Compulsory Education, 2*(1), 83–88.

Paltridge, B., et al. (2011). Doctoral writing in the visual and performing arts: Issues and debates. *International Journal of Art & Design Education, 30*(2), 242–255.

Pang, M. F. (2003). Two faces of variation: On continuity in the phenomenographic movement. *Scandinavian Journal of Educational Research, 47*(2), 145–156.

Pannells, T. C., & Claxton, A. F. (2008). Happiness, creative ideation, and locus of control. *Creativity Research Journal, 20*(1), 67–71.

Parry, S. (2007). *Disciplines and doctorates*. Dordrecht, Netherlands: Springer.

Payne, D. (2008). Exhibiting information literacy: Site-specific art and design interventions at the Ontario College of Art & Design. [Article]. *Art Libraries Journal, 33*(1), 35–41.

Pearson, M., Evans, T., & Macauley, P. (2008). Growth and diversity in doctoral education: Assessing the Australian experience. *Higher Education, 55*(3), 357–372.

Peet, M. (2012). Leadership transitions, tacit knowledge sharing and organizational generativity. *Journal of Knowledge Management, 16*(1), 45–60.

Perkins, D. (2005). The case for a cooperative studio classroom: Teaching petrology in a different way. *Journal of Geoscience Education, 53*(1), 101–109.

Petelin, G. (2006). Visual art doctorates: Practice-led research or research per se? *Media International Australia, Incorporating Culture & Policy,*(118), 25–33.

Peters, M. A. (2010). Practice. In P. Murphy, M. A. Peters & S. Marginson (Eds.), *Imagination: Three models of imagination in the age of the knowledge economy* (pp. 363–382). New York: Peter Lang.

Phillips, G. (2013). ERA 2012: Lose a battle, win the war–the future for journalism research. *Australian Journalism Review, 35*(1), 7–10.

Phillips, T. (1986). Artists on libraries 1. *Art Libraries Journal, 11*(3), 9–10.

Piper, D. (1997). Through the I of the teacher: Towards a postmodern conception of self. *McGill Journal of Education, 32*(1), 51–67.

Pitman, T., & Broomhall, S. (2009). Australian universities, generic skills and lifelong learning. *International Journal of Lifelong Education, 28*(4), 439–458.

Polanyi, M. (1962). *Personal knowledge: Towards a post-critical philosophy* (Corrected ed.). Chicago, IL: University of Chicago Press.

Polanyi, M. (1966). The logic of tacit inference. *Philosophy, 41*(155), 1–18.

Polanyi, M. (1967). *The tacit dimension*. London: Routledge & Kegan Paul.

Polanyi, M. (1970). Science and man. *Proceedings of the Royal Society of Medicine, 63*(9), 969–976.

Powell, E. F. (1995). *Information seeking behaviors of studio artists.* Masters dissertation, University of North Carolina, Chapel Hill.

Prior, N. (2005). A question of perception: Bourdieu, art and the postmodern. *The British Journal of Sociology, 56*(1), 123–139.

Rawolle, S. (2010). Practice chains of production and consumption: Mediatized practices across social fields. *Discourse: Studies in the Cultural Politics of Education, 31*(1), 121–135.

Reay, D. (2004). "It's all becoming a habitus": Beyond the habitual use of habitus in educational research. *British Journal of Sociology of Education, 25*(4), 431–444.

Redmond, J. (2000). Research by design. In D. Durling & K. Friedman (Eds.), *Doctoral education in design: Foundations for the future. Proceedings of the conference held 8–12 July, La Clusaz La Clusaz, France* (pp. 461–468). Stoke-on-Trent, UK: Staffordshire University Press.

Reed, B., & Tanner, D. R. (2001). Information needs and library services for the fine arts faculty. *Journal of Academic Librarianship, 27*(3), 229–233.

Rees, V. D. (2005). *Head, heart and hand–A visual autobiography.* PhD thesis, James Cook University, Queensland.

Richardson, D. (2008). The problem of Aboriginal art. *Quadrant Online Magazine, 52*(10). Retrieved June 30, 2011, from http://www.quadrant.org.au/magazine/issue/2008/10/the-problem-of-aboriginal-art

Richardson, J. T. E. (1999). The concepts and methods of phenomenographic research. *Review of Educational Research, 69*(1), 53–82.

Ritterman, J. (2010). Riding the tiger: Leading institutions for higher education and the arts at the beginning of the 21st century. In K. Corcoran, C. Delfos & F. Solleveld (Eds.), *ArtFutures: Current issues in higher arts education*. Amsterdam, Netherlands: ELIA.

Roberts, R. M. (1989). *Serendipity: Accidental discoveries in science*. New York: Wiley.

Runesson, U. (2006). What is it possible to learn? On variation as a necessary condition for learning. *Scandinavian Journal of Educational Research, 50*(4), 397–410.

Rust, C., Mottram, J., & Till, J. (2007). *AHRC research review: Practice-led research in art, design and architecture*. Swindon, UK: Arts and Humanities Research Council.

Ryle, G. (1949). *The concept of mind*. London: Hutchinson.

Sade, G. J. (2012, November 21–23). *Intractable differences: Artistic research and the problem of practice*. Paper presented at the International Conference on Research Creativity: Praxis, Hong Kong Baptist University, HK. Retrieved March 14, 2013, from http://eprints.qut.edu.au/55197/

Saljo, R. (1994). Minding action: Conceiving of the world versus participating in cultural practices. *Nordisk Pedagogik, 2*(2), 71–80.

Saljo, R. (1997). Talk as data and practice: A critical look at phenomenographic inquiry and the appeal to experience. *Higher Education Research & Development, 16*(2), 173–190.

Sandberg, J. (1997). Are phenomenographic results reliable? *Higher Education Research & Development, 16*(2), 203–212.

Sanders, A. F. (1988). *Michael Polanyi's post-critical epistemology : A reconstruction of some aspects of "tacit knowing"*. Amsterdam, Netherlands: Rodopi.

Saunders, D. B. (2014). Exploring a customer orientation: Free-market logic and college students. *The Review of Higher Education, 37*(2), 197–219.

Savas, E. S. (1987). *Privatization: The key to better government*. Chatham, NJ: Chatham House Publishers.

Savolainen, R. (1995). Everyday life information seeking: Approaching information seeking in the context of “way of life”. *Library & Information Science Research, 17*(3), 259–294.

Savolainen, R. (2006). Information use as gap-bridging: The viewpoint of sense-making methodology. *Journal of the American Society for Information Science and Technology, 57*(8), 1116–1125.

Savolainen, R. (2009). Epistemic work and knowing in practice as conceptualizations of information use. *Information Research: An International Electronic Journal, 14*(1). Retrieved 18 March, 2009, from http://informationr.net/ir/14-1/paper392.html

Schilo, A. (2012). ‘Nobody will thank me for this’: Championing the ERA. *Continuum, 26*(2), 215–223.

Schirato, T., & Webb, J. (2002). Bourdieu's notion of reflexive knowledge. *Social Semiotics, 12*(3), 255–268.

Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York: Basic Books.

Schön, D. A. (1987). Changing patterns of inquiry in work and living. *Royal Society for the Encouragement of Arts, Manufactures and Commerce Journal, 135*(5367), 225–237.

Schön, D. A. (1992). The crisis of professional knowledge and the pursuit of an epistemology of practice. *Journal of Interprofessional Care*, *6*(1), 49–63.

Schön, D. A. (1995). Knowing-in-action: The new scholarship requires a new epistemology. *Change, 27*(6), 26–34.

Schuster, P., & Birdsong, C. (2007, November 11–15). *Undergraduate research: Experiences from a three-year project*. Paper presented at the 2007 ASME International Mechanical Engineering Congress and Exposition, Seattle, Washington, DC.

SCONUL. (2001). *Information skills in higher education: A SCONUL position paper*. London: SCONUL. Retrieved April 16, 2012, from http://www.sconul.ac.uk/groups/information_literacy/papers/Seven_pillars.html

Scott, R. (1988). The new binarism?: Staffing aspects of the Green Paper. *Australian Universities Review, 31*(1), 12–15.

Scott, R. (2004). A personal memoir of a policy failure: The failed merger of ANU and the Canberra CAE. *Australian Universities Review, 47*(1), 10–20.

Scrivener, S. A. R. (2006). Visual art practice reconsidered: Transformational practice and the academy. In M. Makela & S. Routarinne (Eds.), *The art of research: Research practices in art and design* (pp. 156–179). Helinski, Finland: University of Art and Design, Helinski.

Scrivener, S. A. R. (2009). The roles of art and design process and object In research. In N. Nimkulrat & T. O'Riley (Eds.), *Reflections and connections: On the relationship between creative practices, knowledge and academic research* (pp. 69–80). Helinski, Finland: University of Art and Design, Helinski.

Scrivener, S. A. R., & Chapman, P. (2004). The practical implications of applying a theory of practice based research: A case study. *Working Papers in Art and Design, 3*. Retrieved 19 March, 2005, from: http://www.herts.ac.uk/research/ssahri/research-areas/art-design/research-into-practice-group/production/working-papers-in-art-and-design-journal

Sennett, R. (2008). *The craftsman*. New Haven, CT: Yale University Press.

Seymour, D. T. (1992). *On Q: Causing quality in higher education*. New York: American Council on Education.

Sheehy, B. C. (2010). *Regulating the university: Examining the regulatory framework of Australian university corporations.* PhD thesis, The Australian National University.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*(2), 63–76.

Shreeve, A., Wareing, S., & Drew, L. (2009). Key aspects of teaching and learning in the visual arts. In H. Fry, S. Ketteridge & S. Marshall (Eds.), *A handbook for teaching and learning in higher education: Enhancing academic practice* (3rd ed.), pp. 345–363). London: Routledge.

Silverman, D. (2006). *Interpreting qualitative data: Methods for analyzing talk, text, and interaction* (3rd ed.). London: Sage.

Simmons, B., & Holbrook, A. (2013). From rupture to resonance: Uncertainty and scholarship in Fine Art research degrees. *Arts and Humanities in Higher Education, 12*(2–3), 204–221.

Simon, B. (1966). The history of education. In J. W. Tibble (Ed.), *The study of education* (pp. 91–131). London: Routledge & Kegan Paul.

Simon, D. (2011). A quantitative study Into grade inflation (perceived and actual) in the College of Business, Dublin Institute of Technology. MA dissertation, Dublin Institute of Technology.

Sims, E., & Shreeve, A. (2012). Signature pedagogies in art and design. In N. L. Chick, A. Haynie & R. A. R. Gurung (Eds.), *Exploring more signature pedagogies: Approaches to teaching disciplinary habits of mind* (pp. 55–67). Sterling, VA: Stylus.

Sin, S. (2010). Considerations of quality in phenomenographic research. *International Journal of Qualitative Methods, 9*(4), 305–319.

Singleton-Jackson, J., Jackson, D., & Reinhardt, J. (2010). Students as consumers of knowledge: Are they buying what we're selling? *Innovative Higher Education, 35*(5), 343–358.

Slagter, H. A., et al. (2007). Mental training affects distribution of limited brain resources. *PLoS Biology, 5*(6), e138. Retrieved August 20, 2013, from http://www.plosbiology.org/article/info%3Adoi%2F10.1371%2Fjournal.pbio.0050138.

Slaughter, S., & Leslie, L. L. (1997). *Academic capitalism: Politics, policies, and the entrepreneurial university*. Baltimore, MD: Johns Hopkins University Press.

Smith, D. W. (2011). Phenomenology. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy*. Retrieved January 8, 2013, from http://plato.stanford.edu/archives/fall2011/entries/phenomenology/

Smith, H., & Dean, R. T. (Eds.). (2009). *Practice-led research, research-led practice in the creative arts*. Edinburgh: Edinburgh University Press.

Snavely, L., & Cooper, N. (1997). The information literacy debate. *Journal of Academic Librarianship, 23*(1), 9–14.

Snell, T. (2007, May 9). *Exhibitions as examinations*. Paper presented at the John Curtin Gallery Public Lecture Program, in association with the dOFaO7 Exhibition. Perth, WA: Curtin University of Technology. Retrieved January 12, 2009, from hgso.curtin.edu.au/pdf/Exhibitions_as_Examinations.pdf

Spiegelberg, H. (1975). *Doing phenomenology: Essays on and in phenomenology*. The Hague, Netherlands: Nijhoff.

Spink, A., & Cole, C. (2006). Human information behavior: Integrating diverse approaches and information use. *Journal of the American Society for Information Science and Technology, 57*(1), 25–35.

Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.

Stam, D. C. (1995). Libraries as a bridge between artist and society. *Inspel, 29*(4), 275–282.

Stensaker, B. (2007). The relationship between branding and organisational change. *Higher Education Management and Policy, 19*(1), 13–29.

Stephens, R. P., Jones, K. W., & Barrow, M. V. (2011). The book project: Engaging history majors in undergraduate research. *History Teacher, 45*(1), 65–80.

Stewart, R. (2007). Creating new stories for praxis: Navigations, narrations, neonarratives. In E. Barrett & B. Bolt (Eds.), *Practice as research: Approaches to creative arts enquiry* (pp. 123–133). London: Tauris.

Strand, D. (1998). *Research in the creative arts: Evaluations and investigations programme*. Canberra, ACT: DEETYA, Higher Education Division.

Su, Y. (2014). Self-directed, genuine graduate attributes: The person-based approach. *Higher Education Research & Development, (pre-print)*, 1–13.

Sullivan, G. (2005). *Art practice as research: Inquiry in the visual arts*. Thousand Oaks, CA: Sage.

Sullivan, G. (2007). Creativity as research practice in the visual arts. In L. Bresler (Ed.), *International handbook of research in arts education* (pp. 1181–1198). Netherlands: Springer.

Sundin, O. (2008). Negotiations on information-seeking expertise: A study of web-based tutorials for information literacy. *Journal of Documentation, 64*(1), 24–44.

Svensson, L. (1989). The conceptualisation of cases of physical motion. *European Journal of Psychology of Education, 4*(4), 529–545.

Svensson, L. (1994). Theoretical foundations of phenomenography. In R. Ballantyne & C. Bruce (Eds.), *Phenomenography: Philosophy and practice conference proceedings* (pp. 9–20). Brisbane, QLD: QUT.

Svensson, L. (1997). Theoretical foundations of phenomenography. *Higher Education Research & Development, 16*(2), 159–171.

Svensson, L., & Edstrom, A. (2011). The function of art students' use of studio conversations in relation to their artwork. *International Journal of Education and the Arts, 12*(5), 1–29.

Swartz, D. (1997). *Culture & power: The sociology of Pierre Bourdieu*. Chicago, IL: University of Chicago Press.

Sweetman, P. (2003). Twenty-first century dis-ease? Habitual reflexivity or the reflexive habitus. *The Sociological Review, 51*(4), 528–549.

Tan, K. H. K. (2009). Variation theory and the different ways of experiencing educational policy. *Educational Research for Policy and Practice, 8*(2), 95-109.

Tassoni, J. P., & Lewiecki-Wilson, C. (2005). Not just anywhere, anywhen: Mapping change through studio work. *Journal of Basic Writing, 24*(1), 68–92.

Teisman, G., & Buuren, A. V. (2007). Implementing NPM: A complexity perspective on public management reform trajectories. In C. Pollitt, S. V. Thiel & V. Homburg (Eds.), *New public management in Europe: Adaptation and alternatives* (pp. 181–195). Basingstoke, UK: Palgrave.

Thomas, G. (1998). The myth of rational research. *British Educational Research Journal,* 24(2), 141–161.

Thompson, J. B. (2001). The media and politics. In A. Scott & K. Nash (Eds.), *The Blackwell companion to political sociology* (pp. 173–182). Malden, MS: Blackwell.

Thomson, P. (2008). Field. In M. Grenfell (Ed.), *Pierre Bourdieu: Key concepts* (pp. 67–81). Stocksfield, UK: Acumen.

Thomson, P. (2010). Headteacher autonomy: A sketch of a Bourdieuian field analysis of position and practice. *Critical Studies in Education, 51*(1), 5–20.

Thornton, M. (2009). Academic un-freedom in the new knowledge economy. In A. Brew & L. Lucas (Eds.), *Academic research and researchers* (pp. 19–34). Maidenhead, UK: Open University Press.

Threadgold, S., & Nilan, P. (2009). Reflexivity of contemporary youth, risk and cultural capital. *Current Sociology, 57*(1), 47–68.

Throsby, C. D., & Hollister, V. (2003). *Don't give up your day job: An economic study of professional artists in Australia.* Surry Hills, NSW: Australia Council.

Throsby, C. D., & Thompson, B. (1994). *But what do you do for a living?: A new economic study of Australian artists*. Strawberry Hills, NSW: Australia Council.

Todd, R. (1999). Utilization of heroin information by adolescent girls in Australia: A cognitive analysis. *Journal of the American Society of Information Science, 50*(1), 10–23.

Toledano O'Farrill, R. (2008). *Conceptions of effective information use and learning in a tele-health organization: A phenomenographic study of information literacy and knowledge management at work.* PhD thesis, Robert Gordon University, Aberdeen, Scotland.

Toyne, D. (1975). Requests at Falmouth School of Art. *ARLIS Newsletter* (24), 7–9.

Toyne, D. (1977). A philosophy for Falmouth. *Art Libraries Journal, 2*(4), 24–30.

Toyne, D. (1987). The community role of academic art libraries. *Art Libraries Journal, 12*(3).

Toyne, D., & Broxis, P. (1984). Computerised cataloguing at Falmouth School of Art. *Art Libraries Journal, 9*(3/4).

Tranter, D. (2003, July 17–18). *"Fish out of water": Students from disadvantaged schools and the university experience*. Paper presented at the Creating Spaces: Interdisciplinary Writings in the Social Sciences Conference, Canberra, ACT.

Trepanier, P. (1986). Artists on libraries 2. *Art Libraries Journal, 11*(3), 11–12.

Trigwell, K. (2000). A phenomenographic interview on phenomenography. In J. A. Bowden & E. Walsh (Eds.), *Phenomenography* (pp. 62–82). Melbourne, VIC: RMIT University Press.

Trounson, A. (2013, March 13). Rewarding impact of research "unjust". *The Australian,* p. 29.

Tsoukas, H. (2003). Do we really understand tacit knowledge? In M. Easterby-Smith & M. A. Lyles (Eds.), *The Blackwell handbook of organizational learning and knowledge management* (pp. 410–427). Oxford, UK: Blackwell.

Turner, N., Wuetherick, B., & Healey, M. (2008). International perspectives on student awareness, experiences and perceptions of research: Implications for academic developers in implementing research-based teaching and learning. *International Journal for Academic Development, 13*(3), 199–211.

Turner, S. (2012). Making the tacit explicit. *Journal for the Theory of Social Behaviour, 42*(4), 385–402.

Ucak, N. O. (2011). Information use in art: A citation analysis of sources used in art theses in Turkey. *The Journal of Academic Librarianship, 37*(1), 77–81.

Uljens, M. (1996). On the philosophical foundations of phenomenography. In B. Hasselgren & G. Dall'Alba (Eds.), *Reflections on phenomenography: Toward a methodology?* (pp. 103–128). Göteborg, Sweden: Acta Universitatis Gothoburgensis.

UNESCO, NFIL, & IFLA (2005). *Beacons of the information society: Alexandria Proclamation on Information Literacy and Lifelong Learning. High Level Colloquium on Information Literacy and Lifelong Learning, Bibliotheca Alexandrina, 6–9 November 2005.* Retrieved April 18,

2012, from http://www.ifla.org/en/publications/beacons-of-the-information-society-the-alexandria-proclamation-on-information-literacy-

University of Lincoln (n.d.) Student as producer. Retrieved May 20, 2014, from http://studentasproducer.lincoln.ac.uk/

University of New South Wales College of Fine Arts (n.d.) COFA assessment criteria and graduate attributes. Retrieved May 29, 2014, from www.cofa.unsw.edu.au/about-us/learning-teaching/policies-guidelines/

Usher, R., Bryant, I., & Johnston, R. (1997). *Adult education and the postmodern challenge: Learning beyond the limits*. London: Routledge.

Vandenberghe, F. (1999). "The real is relational": An epistemological analysis of Pierre Bourdieu's generative structuralism. *Sociological Theory, 17*(1), 32–67.

Van den Bosch, A., & Rentschler, R. (2009). Authorship, authenticity, and intellectual property in Australian Aboriginal art. *The Journal of Arts Management, Law, and Society, 39*(2), 117–131.

van Zijl, C. W., & Gericke, E. M. (1998). Information-seeking patterns of artists and art scholars at the Vaal Triangle Technikon. *South African Journal of Library & Information Science, 66*(1), 23–33.

van Zijl, C. W., & Gericke, E. M. (2001). Methods used by South African visual artists to find information. *Mousaion, 19*(1), 3–24.

van Zijl, C. W., & Gericke, E. M. (2002). Use of electronic databases by South African visual artists: A cross-sectional study. *South African Journal of Library & Information Science, 68*(1), 53–67.

Veblen, T. (1957). *The higher learning in America*. New York: Sagamore Press.

Victorian College of the Arts (2004). *Developing an effective destination survey for creative arts graduates: The VCA 2004 pilot study.* Melbourne.

Vincent-Lancrin, S. (2006). What is changing in academic research? Trends and future scenarios. *European Journal of Education,* 41(2), 169–202.

Virkus, S. (2003). Information literacy in Europe: A literature review. *Information Research, 8*(4). Retrieved June 25, 2011, from http://informationr.net/ir/8-4/paper159.html?referer=www.clickfind.com.au.

Visick, R., Hendrickson, J., & Bowman, C. (2006). *Seeking information during the creative process–A pilot study of artists.* Retrieved August 25, 2008, from http://staff.washington.edu/jath/portfolio/570final.pdf

Wacquant, L. J. D. (1989). Towards a reflexive sociology: A workshop with Pierre Bourdieu. *Sociological Theory, 7*(1), 26–63.

Wacquant, L. J. D. (1990). Sociology as socioanalysis: Tales of Homo Academicus. *Sociological Forum, 5*(4), 677–689.

Wacquant, L. J. D. (1996). The self-inflicted irrelevance of American academics. *Academe, 82*(4), 18–23.

Wade, M. (2013, 8 June). Income up, but mental illness costing $190b a year. *Sydney Morning Herald,* p. 4.

Walker, C. (2012). *Regulating the big, the fast and the dangerous: The emergence of dynamic, responsive regulatory learning in the Australian trucking sector.* Unpublished PhD, University of New South Wales.

Walsh, E. (2000). Phenomenographic analysis of interview transcripts. In J. A. Bowden & E. Walsh (Eds.), *Phenomenography* (pp. 19–33). Melbourne, VIC: RMIT University Press.

Wareham, T. (2008). *Creative graduates: Enhancing teaching-research links in the creative arts: Briefing paper*. York, UK: The Higher Education Academy. Art Design Media Subject Centre & Palantine, Subject Centre for Dance, Drama & Music.

Warwick University (n.d.). The Reinvention Centre: A centre for excellence in teaching and learning. Retrieved May 20, 2014, from http://www2.warwick.ac.uk/fac/cross_fac/iatl/cetl/about/

Webb, G. (1997). Deconstructing deep and surface: Towards a critique of phenomenography. *Higher Education, 33*(2), 195–212.

Webber, S. (2013). Blended information behaviour in Second Life. *Journal of Information Science, 39*(1), 8

Webster, C. M., & Kenney, J. (2011). Embedding research activities to enhance student learning. *International Journal of Educational Management 25*(4), 361–377.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge, UK: Cambridge University Press.

Wertheimer, M. (1945). *Productive thinking*. New York: Harper.

Wheeler, J. A. (1990). Information, physics, quantum: The search for links. In W. H. Zurek (Ed.), *Complexity, entropy, and the physics of information: The proceedings of the 1988 Workshop on Complexity, Entropy, and the Physics of Information held May–June, 1989, in Santa Fe, New Mexico* (pp. 3–28). Redwood City, CA: Addison-Wesley.

Whiteside, A. I. (2010). *Reconciling vocabularies: Making connections between studio art and library research.* Masters dissertation, University of North Carolina at Chapel Hill.

Williams, P., et al. (2009). The role and future of the monograph in arts and humanities research. *Aslib Proceedings,* 61(1), 67.

Willison, J., & O'Regan, K. (2007). Commonly known, commonly not known, totally unknown: A framework for students becoming researchers. *Higher Education Research and Development, 26*(4), 393–409.

Wilson, J. M. (1994). The CUPLE physics studio. *Physics Teacher, 32*(9), 518–523.

Wolfram Cox, J., & Minahan, S. (2002). Crafting organization. *Culture and Organization, 8*(3), 209–224.

Wright, D. G., Bennett, D., & Blom, D. (2010). The interface between arts practice and research: Attitudes and perceptions of Australian artist-academics. *Higher Education Research & Development, 29*(4), 461–473.

Wueste, D. E., & Fishman, T. (2010). The customer isn't always right: Limitations of “customer service” approaches to education or why higher ed is not Burger King. *International Journal for Educational Integrity, 6*(1), 3–12.

Yates, C. L. (2013). *Informed for health: Exploring variation in ways of experiencing health information literacy.* PhD thesis, Queensland University of Technology, Brisbane.

Yeo, S. R. (2002). *Evaluation of a university physics studio learning environment: The interrelationships of students' perceptions, epistemological beliefs and cognitive outcomes.* PhD thesis, Curtin University of Technology, Perth, WA.

Zaqout, F., & Abbas, M. (2012). Towards a model for understanding the influence of the factors that stimulate university students' engagement and performance in knowledge sharing. *Library Review, 61*(5), 345–361.

Ziman, J. M. (2000). *Real science: What it is, and what it means*. Cambridge, UK: Cambridge University Press.

Appendix 1: Study Participant Information and Consent Form

PARTICIPANT INFORMATION STATEMENT

(Informing research: Art & design practitioner researchers engaging with information)

You *(participant name)* are invited to participate in a study of the different ways that studio-based researchers engage with information. I (i.e., Margaret Blackmore) hope to be able to identify qualitatively different conceptions of information use in studio-based research. You were selected as a possible participant in this study because you are currently researching within a studio practice.

If you decide to participate, I will ask you five questions relating to your research practice. The interview should take around 45 minutes of your time & can be undertaken at a time that is convenient for you. The interview will be recorded.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or except as required by law. If you give your permission by signing this document, I plan to include the research results in a PhD thesis (College of Fine Arts, UNSW). In any research report, information will be provided in such a way that you will not be personally or professionally identified.

Complaints may be directed to the Ethics Secretariat, the University of New South Wales, Sydney 2052, Australia. (Phone: 9385 4234; Fax: 9385 6648; Email: ethics.sec@unsw.edu.au

Your decision whether or not to participate will not prejudice your future relations with the University of New South Wales. If you decide to participate, you are free to withdraw your consent and to discontinue participation at anytime without prejudice.

If you have any questions, please feel free to ask me. If you have additional questions later, I can be contacted by phone at (phone number) or by email at (email address).

You will be given a copy of this form to keep.

Participant Consent Form

You are making a decision whether or not to participate. Your signature indicates that, having read the information provided above, you have decided to participate.

…… …….

Signature of Research Participant Signature of Witness

…… …….

(Please PRINT name of participant) (Please PRINT name of witness)

…… …….

Date consent form signed Nature of Witness

…… …….

Signature(s) of Investigator(s) (Please PRINT Name of investigator)

Revocation of consent

I hereby wish to **WITHDRAW** my consent to participate in the research proposal described above and understand that such withdrawal **WILL NOT** jeopardise any treatment or my relationship with The University of New South Wales.

…….

Signature Date

……

Please PRINT Name

The section for Revocation of Consent should be forwarded to (Margaret Blackmore – c/- School of Art History and Art Education. College of Fine Arts, UNSW (at phone number & email address)

Appendix 2: Australian and New Zealand Information Literacy (ANZIL) Standards

Standard One *The information literate person recognises the need for information and determines the nature and extent of the information needed*

Standard Two *The information literate person finds needed information effectively and efficiently*

Standard Three *The information literate person critically evaluates information and the information seeking process*

Standard Four *The information literate person manages information collected or generated*

Standard Five *The information literate person applies prior and new information to construct new concepts or create new understandings*

Standard Six *The information literate person uses information with understanding and acknowledges cultural, ethical, economic, legal, and social issues surrounding the use of information*

Source: Bundy, A. L. (Ed.). (2004). *Australian and New Zealand Information Literacy Framework: Principles, Standards and Practice* (2nd ed.).