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How do academics come to know? The structure and contestation of discipline-specific knowledge in a Design school

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Abstract. This paper reports the results of a small-scale (n = 9) interview study of the 'ways of knowing' of academics in a Design School at a South African polytechnic. The focus of the study was on exploring the perceptions of these academics about discipline-specific knowledge in their fields. The paper presents an analysis of the responses, derived from semi-structured interviews, to questions concerning the origin, development, structure, and contestation of knowledge. Responses were classified and tabulated in terms of their relation to theories of epistemology and the findings analysed in relation to how they might be said to be descriptive of qualitatively different views of the construction and contestation of discipline-specific knowledge.

The analysis suggests that there are some areas of commonality, such as the agreement that their knowledge has an eclectic base and that its structure is influenced by personal, historical, professional and technological imperatives in the discipline. On the other hand, there are some tensions in beliefs about the structure and contestation of knowledge. The analysis draws out tensions between the established canon and popular culture; between individual intuition and professional benchmarks; and between Eurocentric and Afrocentric knowledge-bases. Concluding comments suggest that these tensions have important implications for both the content and methodology of teaching.

Keywords: contestation of knowledge, discipline-specific knowledge, epistemologies, teaching and learning, ways of knowing

Introduction

The field of student learning research has from time to time been focused on elements of learners' epistemologies of knowledge, especially on ways in which learners' epistemologies lead them to expect discipline-specific knowledge to be packaged and mediated by academics in certain ways. This study attempts to contribute to a growing understanding of how academics think their knowledge is packaged and developed. The study described in this paper is an exploration of academics' views of the origin, structure, development and contestation of their discipline-specific knowledge. We take the view that these four focuses collectively represent the notion of an epistemology of

knowledge. This epistemology is constituted of these academics' views of the sources of their knowledge; how that knowledge is packaged and developed; what brings about its development; and how and why it is contested. We argue that these constituents reflect their worldviews of the discipline.

Theoretical framing

The question of how academic staff, and the learners with whom they are involved in teaching and learning, come to know in a discipline-specific sense is of more than research interest. It seems to carry implications for the design of teaching and learning, and for learning outcomes in a theoretical and practical sense too.

The publication of William Perry's study (1970) of first-year learners' epistemological beliefs about knowledge was ground-breaking in drawing attention to the existence of intellectual stages within which learners' appear to embark on academic study. Essentially, Perry argued that these stages were largely a function of learners' intellectual and social maturity on entry to academic study. But his study was also seminal in demonstrating that these stages were not necessarily static and could undergo change, at least in part, due to the influence of academic course structure and process. Thus, if learners were consistently and assiduously presented with ways of knowing that were different from their particular epistemologies (or worldviews), and were challenged to think differently about these epistemologies, it was possible that some would undergo change.

His descriptive classification of learners' epistemologies, or ways of knowing about knowledge and learning, pointed to the existence of three main clusters. In the first cluster, learners appeared to see knowledge as absolute, uncontested and handed down in unchanged form by academics or teachers, in whom was vested the unquestioned authority to mediate this knowledge to the learners. In the second cluster of epistemological beliefs, learners appeared to be describing coming to know as relative to time, context and interpretation, but they still appeared to some extent to see this relativism as an ambivalence, which would eventually be clarified and resolved by the academic or teacher. The final cluster of beliefs was characterised by learners' greater commitment to a particular understanding and interpretation of knowledge, a commitment that was based on careful evaluation of extant contextual, temporal, personal and expert evidence.

Perry was later to argue compellingly for the intellectual diversity of learners' epistemological beliefs in classrooms (Perry 1988). He made the point that a central concern of teaching was for teachers to be aware of this diversity and seek to challenge learners to move in the direction of what he

believed to be greater intellectual maturity. Perry felt that the goal of this challenge was for learners to reach the stage where they believed all knowledge to be context-bound and open to interpretation, and to be committed to a particular worldview that is based on informed, developing evidence. It was clear from Perry's arguments that this latter form of intellectual maturity would not always be reached by all learners, especially because the process of reaching it was in part due to their own effort and personal development.

A study by Sheppard and Gilbert (1991) provided evidence of the extent to which learner epistemologies could be linked to ways in which knowledge was packaged and presented in a discipline-specific sense. Drawing on the somewhat contrasting disciplines of Science and Humanities, Sheppard and Gilbert showed that learners in the Science discipline field were more likely to believe knowledge to be inviolate and handed down unchallenged than those in the Humanities field, who seemed to believe knowledge to be contested and contestable. These researchers were able to show that these differences were due in part to the way in which contrasting courses had been designed and presented, and in another part due to the beliefs that learners had about the way knowledge was typically structured and presented in such disciplines.

Following from the previous paragraph, then, it is clear that learners' epistemological beliefs are related to their conceptions of what they think learning is and to what practitioners think teaching is. The link between learners' epistemologies and their conceptions of learning has been demonstrated in a number of international research studies over the past 20 years or so. Two of the most important have been those of Säljö (1979) and Marton et al. (1993). These two and other studies (for example, Kember 2001) have demonstrated with contrasting learner groups that learners who conceive of learning as being about the collection, memorising and reproduction of information in a mechanical sense to fulfil perceived assessment demands, for example, believe this partly because they believe knowledge to be absolute and incontestable. By contrast, learners who conceive of learning as being related to the transforming of knowledge within personal understanding and interpretative frameworks also have to believe that knowledge to be relative, contextual and based on developing evidence.

Studies have also been conducted on teachers' conceptions of their own teaching (Samuelowicz and Bain 1992; Burroughs-Lange 1996) and associations between these conceptions and the quality of student learning (Gow and Kember 1993; Kember and Gow 1994; Prosser and Trigwell 1997; Prosser et al. 1994; Trigwell and Prosser 1997; Trigwell et al. 1994). These studies demonstrate contrasting dimensions of variation amongst teachers' conceptions of teaching, some of which emphasise teaching as the dissemination of information and others which emphasise teaching as being focused

on the promotion of conceptual change. Dimensions of teaching conception are also related to factors such as teachers' beliefs about their learners; what they (the teachers) think learning is; what they believe about knowledge in their profession; and what they believe their responsibility to their students to be. The last four studies in particular illuminate associations between these emphases and the extent to which these are related to the adoption of a teacher-centred or a student-centred focus by teachers and the degree to which learners conceive of learning as being about accumulating information or developing personal understanding.

In addition to the above associations between beliefs about knowledge and ways of knowing, conceptions of teaching and conceptions of learning, there is also accumulating evidence that gender is a source of variation in learners' ways of knowing (Belenky et al. 1986; Baxter Magolda 1992; Cliff 1996; Mackeracher 1996). These studies independently report a primary contrasting group-level dimension of variation in women and men's ways of knowing that is, respectively, collectivist or individualist. Women's ways of knowing appear partly to stem from engagement with knowledge at an interpersonal level: women come to know in relation to how other learners (and teachers) come to know, and they come to know through personal as well as academic interaction with these others. Men, by contrast, prefer to develop beliefs about knowledge that they see as separate from the beliefs of others, and their academic beliefs are not as personalised as women's. A previous study of ways of knowing amongst a group of teachers enrolled in postgraduate coursework (Cliff 1996) also found an isolated dimension amongst women learners that epistemological beliefs could be developed from intuitive knowing, i.e. a sense that evidence was admissible or not based on the extent to which it resonated with these learners' spirits, their sense of what was admissible, their sense that they just knew it was right or wrong.

Writers such as Kitchener (1983) and King and Kitchener (1994) have pointed to the notion that the development of epistemological beliefs is related to the capacities that learners have to reflect on the origin, development and contestation of these beliefs. Kitchener's notion of 'epistemic' cognition points to learners' being able to gain an understanding of the conceptual underpinnings of a particular discipline, and an understanding of a particular canon and its origins and development. Canon is taken to mean here the cultural and contextual roots of thinking in the discipline, the hegemonic assumptions that give rise to one form of thinking being valued more highly than another, and considerations of the ways in which particular thinkers come to be regarded as authorities in the discipline, and why they do. The capacity to reflect on these epistemic beliefs, these writers argue, is also amenable to change as a function of personal developmental factors,

and teaching and learning processes. What their work seems to imply is that it is important for academic practitioners to encourage reflective activity of this kind and to be aware of their own discipline-specific epistemic and hegemonic assumptions.

Another body of literature of relevance to the study described in this paper is concerned with how professionals come to know-in-action. This literature relates to the development of teachers' and learners' beliefs about knowledge as competency and expertise. Put differently, it relates to professionals' and developing professionals' beliefs about what makes them competent, in an applied sense, to perform practical tasks and skills in a particular discipline; or it relates to their beliefs about what makes them and others experts or authorities, at a conceptual or practical level, in a discipline-specific sense. It would seem that the development of knowledge of these beliefs about competency and expertise are the product of a complex interplay between intellectual maturity (including capacities for reflection), amenability to changing beliefs, and interventions through course processes and practitioners.

The work of Schön (1983) in this regard is seminal, especially with regard to his views on what constitutes expertise in a discipline, how experts know-in-action, the capacities of these experts to reflect on their knowledge and their knowing, and the differences between experts and novices in constructing their knowledge and understandings. He has persuasively argued the need for a close examination of how professionals go about thinking about and resolving real-world problems, as well as the kinds of knowledge they bring to the resolution of those problems and challenges. In this sense, his work builds upon earlier work (Argyris and Schön 1974; Argyris 1976) that focused attention on espoused theory and tacit theory which is actually utilised in workplace contexts. In Schön's view, the professional who (1) is able to articulate the approach taken to a particular challenge in the real world; (2) can demonstrate the processes whereby a resolution is arrived at; and (3) is able to provide a defensible rationale for adopting a particular approach, might be considered to be a truly reflective practitioner. The preceding discussion has relevance for the study described further on in that it highlights issues around discipline-specific academic expertise, and the role played by the academic in developing reflective practice amongst the learners he or she works with.

Discussion of Schön's work would not be complete without reference to the views of Billett (2001) in suggesting a reconceptualisation of notions of vocational expertise. Billett argues that conceptions of expertise have largely been located in cognitive psychological frameworks, which have tended to ignore the socio-cultural contexts in which thinking – particularly

discipline-specific and vocational thinking – are located. He argues that, in order to better understand beliefs about the construction of expert knowledge, "domains of knowledge [should be seen as] products of reciprocal and interpretative construction arising from individuals' engagement in social practice, rather than being abstracted disciplinary knowledge or disembedded sociocultural tools" (Billett 2001, p. 431).

The focus of the present study, then, is on attempting to understand the epistemologies of a particular subset of academics who are also professionals in their disciplines. We chose to focus on academics' epistemologies of knowledge in similar ways to which Perry and the research of other writers discussed here had chosen to focus on learners' epistemologies of knowledge. As such, we were interested in (1) the extent to which knowledge is seen as relative, context-based and interpretive; (2) how (if at all) epistemologies of knowledge might be different depending upon the discipline-specific base of the particular academic; and (3) how academics' possibly differing epistemologies of knowledge might be expected to influence student learning in a discipline or sub-discipline. We chose sub-disciplines within one particular discipline in an attempt to illuminate similarities and differences of perception amongst these academics. This paper is an analysis and discussion of those similarities and differences. Discussion in this paper is focused on the implications of these similar and different views of knowledge for teaching and learning practices in this Higher Education context.

Study context

The Cape Technikon is a polytechnic type Higher Education institution in Cape Town, South Africa. The School of Design, within which the study participants are located, consists of six different departments: clothing management; and the design departments of fashion; graphic; industrial; interior and jewellery design. We chose to focus on the Design School as a context for our study for two reasons. Firstly, we anticipated that, given the number of different departments in the School, we would be increasing the possibility of variation and context-richness amongst the study sample. Increasing variation and context-richness in a study such as this one is an internationally acceptable and accepted approach in qualitative studies of this kind (Merriam 1988). Secondly, we wanted to test anecdotal assumptions that a School of Design such as this one would show evidence of a widely interpretive and subjective stance towards discipline-specific epistemology.

Sample

For this study, the selected sample (n = 9) was a purposive one. The notion of purposiveness for this kind of study is consistently defended in the research literature on qualitative approaches to research (Patton 1986, 1990; Robson 1993; Maykut and Morehouse 1994; Morse 1994; Merriam and Simpson 1995; Neuman 1997).

Two guiding principles guided sample selection in this context. Firstly, it was focused on the need to obtain a research sample that was likely to have the necessary knowledge, experience and will to be able to reflect meaningfully on the scope of the study (Morse 1994). Secondly, the sample needed to be information-rich (Patton 1990) in the sense of being likely to reflect the complexity of the group being explored. To this end, the focus was on obtaining study participants who had had wide-ranging formal learning and teaching experience; were currently engaged in relevant professional and practical activities in their discipline; and were teaching or had taught or supervised a wide range of different undergraduate and graduate learners and projects.

Methodology for the study

In keeping with the guiding principles outlined in the previous section of this paper, we invited two academics from each of the six departments in the Design School to participate in the study. Potential participants were provided with full details of the research. They were told that we were interested in their views on their discipline-specific knowledge, that we wanted to conduct semi-structured interviews, and that we wanted to talk little and listen a great deal. The following recorded extract from our interview with one of the study participants illustrates how the interview was introduced to each participant, how we connected what we were asking these academics to previous research on student epistemologies of knowledge (discussed in the Introduction to this paper) and how we came to focus on four areas of epistemology (how knowledge originates, how it is structured, and developed, and contested), as conceptualised in the work of Perry, Sheppard and Gilbert and King and Kitchener in particular. Ellipses are used in the extract below only where we have paused in our introducing the topic for discussion, or where ideas have been repeated. Transcribed interview material shows how these questions were weaved into wide-ranging, interviewee-focused discussion and were not asked (or answered) in a rigid, question-and-answer format. Case-study interview data presented in the Analysis section later in this paper will attempt to illustrate how these four focuses grew organically out of the responses of

the participants. In the extract below, AC and RW are the authors and RH is the study participant.

AC: What we got really interested in looking at was the question . . . of how academics like you, like us, like any of us really, in our particular fields, how we . . . develop knowledge. How . . . how we actually come to know things in our particular fields . . . how we think that knowledge sort of changes. In other words, what are the influences on that knowledge? Er, . . . who has the right to contest that knowledge? Um, and how it's developed as a result: how . . . knowledge and understanding in our particular fields changes as a result.

. . . the practical point or the purpose of what we're trying to do . . . is to say, well, does . . . does that actually matter? . . . do we think people . . . across the campus here understand knowledge, and change . . . in knowledge and expertise, do they understand those things differently? And if so, . . . our interest is in does that impact on teaching and learning and so on? . . . Um, and my suspicion . . . my personal suspicion is I think it . . . is different. I think that knowledge is constructed differently in different Faculties. Um, people understand knowledge differently. They see "truth", if you want to call it that, in a different kind of way. It depends on where you are. And that influences the way we convey . . . discipline-specific understanding to students that come into our Faculties.

. . . I remember reading quite an interesting article at one stage, a study which was done with first-year students in two different . . . Faculties . . . Well, it was two different departments. One was a Humanities-based, er, department and another was a Science-based one. And they asked the students these kinds of questions and the students came up with very different views about knowledge. For example, in the Sciencey one, they came up with views that said that knowledge was kind of uncontested. You know, it was given; it was passed down in uncontested, unchanging form. And they seemed to have little or no understanding of theory and . . . and what part theory played in . . . in understanding . . . in coming to some sort of understanding, and whether that theory could ever change or not. They seemed to feel that it didn't. Whereas in the Humanities, there was much more of a sense of these people looking at . . . knowledge as being up for debate and discussion, and open to interpretation and scepticism and query and so on. And . . . then these authors went on to argue about how it was . . . interesting because there were probably assumptions underpinning knowledge . . . in the contrasts there,

that . . . influenced people's, if you like, worldview about Science and, say, Humanities, you know.

Um, and . . . my sense is that it probably happens in any Faculty or in any department in any sort of Higher Education institution. And for me . . . the question is – to get back to the practicality – is what does that mean? . . . does it matter that, for example, . . . I don't know whether this is true or not, but, for example, in an Engineering Faculty, that people get information handed down to them as if it were, you know, unchanged, and . . . had been unchanged for years and years, and it didn't matter. Er, . . . does that have implications? What does it . . . what does it mean for . . . for the learners that come out at the end of it? . . . do they go away from such an experience thinking that there is one kind of truth and that that's all they need to know when they get into the field? Or do they, you know, or do they go away with much greater sense of the field is fluid, um, changing, er, some people's opinions are more important than others for various political and . . . ideological reasons or whatever, because they happen to be powerful people or they happen to hold sway in a particular era, and so on.

RH: What I . . . what I find interesting for myself, relating to what you're saying, is like, is there a difference, say, between what happens in our discipline . . . um, I'm already beginning . . . I'm saying "our" discipline, almost as though there's a kind of ownership there, um, and the discipline of the people, say, like in the Architecture department? How do they operate in this context? How do we operate in that context? Because . . . there could be similarities, you know, between Architecture and Design, but I have a sense that there's a difference. I don't know what it is for sure.

RW: When . . . when you talk about "our", do you mean the whole of the Design group?

RH: I mean . . . I mean . . . the School of Design, you know?

RW: Do you see yourself as having the same fundamental philosophy as people in Interior Design, for instance?

RH: There might be differences. I'm sure there are between, say, Interior and Graphic Design, and that again, and . . . Fashion.

AC: Technical or Drawing or . . .

RH: Fashion . . . you know, Textiles.

AC: Textiles, yes.

RW: Because what Alan and I were looking at at this stage, you've already raised an extension of that. . . . What we were looking at at this stage is just, maybe, to look at – they might be small-scale;

they might be subtle – differences between different disciplines in the Design Faculty. In other words, between Interior and Graphic Design, between Graphic and Fashion, and those things. Um, we hadn't decided whether or not to include the Architectural people yet, because they are . . . Although they are part of the Design Faculty, I think that's sort of under . . . development in a sense. I've got good links with them, um, but it would be very interesting to see. Obviously, a broader scale, it might be very interesting to look at the commonalities in Design, and then compare those with the commonalities in another Faculty, another discipline entirely. Um, at this stage what we're trying to do is to look at, er, ideas about knowledge in the Design Faculty, highlighting perhaps some of the commonalities and . . . differences in . . . different, er, aspects of Design.

AC: Ja. No, I mean, the . . . but I think . . . I think the reason that we thought we'd go fairly narrowly is that it feels to me like quite a weighty, wide kind of subject area . . .

RW: Yes.

AC: . . . and if we start going campus-wide first up like that, we might find ourselves being quite overwhelmed by . . . all the information that we get to collect. Um, that's probably why we felt, . . . let's kind of keep it fairly circumscribed and say, well, let's just stick to one department . . . and see whether there are shades within that department of . . . understanding . . . of different expertise.

RH: There probably are.

AC: Understanding of expertise. So, er, . . . there is, traditionally anyway, there is an assumption in Higher Education that, sort of, indigenous, anecdotal kind of knowledge is . . . is actually not valid. You know, . . . it's not respectable knowledge. Um, and it's not developed out of, you know, theory and . . . practice and expertise in the field. It's just . . . regarded as . . . less valuable, um, in some cases; not always, but in some cases, it's regarded as that. . . . And we did structure, sort of, four questions that we . . . thought we'd like to try. Um, I know you [Rob] wrote them down yesterday. I think they were basically, one, . . . how is knowledge, er, structured? How is it arrived at, um, in the discipline? Then, how is it . . . it's what I said earlier on. How is it arrived at? . . . how does it come under . . . how does it change? And what forces bring about that change? And then, er, sort of, what consequence? You know, in other words, how does it change the way you think in the field, in your field? . . . that's why . . . I'm grateful that you're prepared to do this discussion with

> us now, because for me it still feels quite inchoate, you know, quite under-developed, um, what I'm trying to think about. I'm trying to think about this thing about knowledge being packaged in certain ways, and the consequences of that for students . . . for first-year, second . . . I don't know, for that matter, at what point we start to confront, say, students with the idea that knowledge is not necessarily uncontested, that it does actually change and there are, sort of, . . . it's relative and that it's based in theory and then that theory changes and so the knowledge . . . understandings change.

Potential participants were told that interviews would last approximately 30 minutes, and that they would be recorded and transcribed for later analysis. Transcriptions would be available to participants and to researchers interested in scrutinising them. Participants were advised that the readership of the transcripts would be limited and discreet. In all, 9 Design School academics agreed to participate in the study. Given that full details had been given to them about the nature and purpose of the study and that accepted principles for conducting interview-based research had been followed (Robson 1993; Sarantakos 1993), interviews occurred in a spirit of collegiality and trust. Full transcripts giving evidence of the comprehensiveness of the interviews and the nature of the relationships between participants are available from us.

Once we had completed interview transcription, analysis could be undertaken. Transcripts were assessed independently by each of us. Responses to each of the four focuses on epistemological knowledge were highlighted in the transcripts. These responses were then independently tabulated under each of four headings: where knowledge comes from; how it is structured or packaged; how it is developed; and how it is contested. After this initial pass of the data, we individually classified the tabulated data according to the four themes about knowledge that we had focused on in the study. This process was followed by rigorous discussion of the classifications in order to improve the reliability of our ratings. Final tabulation of the responses drawn from the interviews is also available from us.

Analysis of findings

What follows, is a detailed extract from our interview with the first participant. We do this so that a sense of the process of the interview becomes apparent: that the interview was co-constructed and that, although we had certain focuses in our minds, participants were given extensive opportunity to range widely in their deliberations. We also do this because the process of subsequent interviews was similar. Our comments and interpretations of

the participant's views follow after the extract. Because of space limitation in this paper, we have attempted to extract the gist of what the participant was saying and how we responded to his comments.

RH: RW used . . . an interesting term. You know, the term "knowing" . . . knowing and knowledge. . . . You know, . . . what is knowing? And then what is knowledge? . . . I'm involved . . . with Drawing, which is a very individual thing, . . . they [students] struggle with that very thing, about the individual . . . their individual knowing, which for me related to intuition . . . what we now call 'Drawing'. . . . that activity, which started somewhere . . . And later on, it became channelled . . . Is that when it becomes knowledge, when the channelling process starts? And we're talking here about school: . . . [the] official learning arena . . . [which] then progresses to . . . tertiary education . . . What I struggle with . . . is allowing the student still to be himself or herself.

AC: . . . What do you think they know about Drawing when they come here?

RH: . . . what I'm trying to do . . . is release . . . their inner knowing of the marks that they make as individuals. . . . they come here with baggage . . . a worldview . . . that Drawing should be like x or y or z . . . a Leonardo da Vinci or a Michaelangelo. . . . those benchmarks are used . . . in the schooling process. . . . [But we] attempt to say . . . those marks that you make are actually incredible expressions of your . . . inner self. . . . They think that Leonardo or Michaelangelo . . . are the benchmarks. . . . they come here [polytechnic] . . . with a kind of . . . baggage of various influences: . . . schooling . . . the domestic situation . . . when they get here . . . there's another moulding again that's taking place.

RW: . . . where would you say that your knowledge about Drawing comes from, . . . where you are now?

RH: . . . I didn't go through [the same] kind of channelling process . . . [Drawing has] become . . . a process of thinking when . . . I'm working. . . . [my] scribbles are, quite often, the end-point as well. . . . I see them as an end in themselves as well. . . . that's a way I've come to . . . develop my own knowledge about Drawing, er, in myself.

AC: . . . you mentioned Michaelangelo and Leonardo da Vinci . . . What is it that makes those people . . . the benchmarks?

RH: . . . it's related to the whole thing of expertise . . . an artist is measured by how closely he can represent . . . what people see as reality. . . . the intuitive mark is possibly a more difficult mark to

respond to. . . . [People] marvel at the . . . realistic . . . that level of expertise . . . the other type of work [intuitive] is . . . maybe a mark of rebellion . . . I'm just saying to [students], 'Look at your own mark that you're making honestly [and] take it . . . to the nth degree . . . don't emulate that which is way out of your own reality.

AC: . . . how I'm interpreting what you're saying at the moment is that in this . . . post-modern world . . . there are no benchmarks?

RH: . . . I do have a sense that benchmarks are applied . . . a project or a brief that the students have to answer . . . there is a problem set up . . . the designer . . . can apply benchmarks from which to judge what he's doing or he can take an approach where he applied his own benchmarks . . . there's more flexibility even than there might have been prior to the . . . post-modern. [mentions a designer's name] . . . he's a guy who's broken the rules [and] radical change alters perceptions.

RW: When you look at something which is, say, fairly new . . . do you think in relation to the old standards?

RH: [You have] an awareness of the past . . . and an awareness of the present . . . it has to do with conventions: that people who make radical changes . . . they set out consciously to make the change. Or . . . it's just an intuitive response to a set of circumstances.

RW: But how [does] this new knowledge . . . filter through to the rest of the people in that field?

RH: . . . it does happen in the . . . teaching-learning arena . . . it also comes about through the . . . visual stimulus . . . where people are exposed to . . . visual material . . . I have a sense that [students] only know when I make them aware of it, as the teacher . . . Whether they believe you or not . . . do they actually believe that they're reaching something else, another level . . . that's what I struggle with. [I encourage them] to push those limits [and to see] the marks they're making on paper [but] they need to know . . . approaches to Drawing, to Design. . . . Then there's the aspect of themselves and pushing themselves. . . . I don't think that . . . we can discount [influences like] music and fashion. . . . [But] I come along with my approach, which is anti that worldview. And . . . they find themselves possibly engaged . . . in a kind of battle with me, or with my worldview, my approach.

In this excerpt, RH seems to draw a distinction, which he continues to refer to, between individual knowing (related to "intuition") and knowing that comes through what he terms the "official learning arena" (school and tertiary education). His context in Drawing and his personal reported experience of

not having gone through the same "channelling process" would seem related to his notion of knowing being individual and to his attempts to encourage his students to release their inner knowing and to push this to what he later calls the "nth degree".

For RH, there would seem to be a clear tension between intuitive knowing (perhaps even what he terms "rebellion") and the knowing that stems from what people perceive to be the benchmarks of the discipline (such as Leonardo da Vinci). In the context of talk of da Vinci, for example, he seems to define "benchmarks" in Drawing as being those that can most closely represent 'reality' (the real world) – and appears to see "rebellion" as demonstrating opposition to this form of benchmark. He seems to say that knowledge in Drawing is structured by the academic discipline and also by the professional parameters of "a project or brief" given to students. But there is a consistent theme for RH that a designer can "take an approach where he applie[s] his own benchmarks". This would seem for him to be the source of contestation for a student and, towards the end of the excerpt, RH seems to take the view that his role is to present an "anti" worldview for students to contest. He also seems to be saying that he needs to contest the worldviews of students that have been shaped by trends in "music and fashion".

Change in the discipline of Drawing he sees as coming through "radical" means, that he relates to "a guy . . . who's broken the rules" and people who "set out consciously to make the change".

Space limitations for this paper militate against detailing every interview to the same extent as we have done this first one. We have made the point that the focuses and processes of all the interviews were similar, and will proceed now to provide short excerpts from three of the other interviews we conducted. In each case, we attempt to capture faithfully the gist of what each respondent is saying about the epistemology of knowledge in a particular sub-discipline within Design. In cases where we do not present any details of interviews, we will comment on these discussions insofar as they offer extra perspectives not captured by the excerpts we do discuss.

The following respondent interviewed was from the sub-discipline of Interior Design. In the course of his 30-minute interview, he made the following comments in response to our questions about the origins, structure, development and contestation of knowledge in Interior Design.

> RO: [Knowledge in Interior Design] is a traditional thing . . . we have been taught by other designers . . . it's really conservative in that sense . . . knowledge must be tested before you know what's going on. You can't do design in theory . . . it's an experiential thing . . . There is a dimension of theory: scientific stuff like the use of materials and fixing and glues . . . in the first place, we get briefs . . . a

> big component of this whole body of knowledge is the history . . . if you don't know what's happened before or what a designer has done before you, you can't actually build on that.
>
> [Design] changes in the sense that there is [sic] always new ways of doing things, new things on the market. . . . design is fundamentally different [from Art] for the simple reason that you have to answer rules: . . . you have a client, you have a budget, you have constraints . . . you reinterpret objects, but within certain parameters . . . people can interpret the same object in so many ways, but everyone would still answer a very specific set of criteria. . . . it either works or it doesn't. [Change is] probably economic: . . . when people have money they can spend, then design tends to proliferate. . . . it's also a media thing: . . . that people see things which they then want. But the reason why I take that back to economics is, that is what drives it.
>
> [Ideas in the discipline are developed by] some guy comes along and takes photographs and publishes . . . your peers check this stuff out . . . this guy just accumulates this reputation . . . they get published more and more. . . . It's a bit like styles in Architecture . . . this whole post-modern thing . . . it's a few designers that start reacting against this to keep this big sort of modernist purism. . . . And they start going back to sort of, let's say, classicism. . . . everyone here [in South Africa] is desperately trying to work within this whole African thing. The rule [still is]: what works. And then on top of that, you get styling, which is a fashion thing. In other words, fashions change. . . . There is sort of a philosophical ideological component to it, and in [Design], it says basically that you have to work within the context of your time. . . . respect comes [for] guys because they are seen as the people who know what they are talking about.

RO makes the point that knowledge in Interior Design seems inherently conservative, but the sense of the first paragraph of the excerpt is that, although knowledge is conservative (or passed down), it must be tested and can only be built on if there is thorough knowledge of what has gone before. As he indicates in the second paragraph of the excerpt, change (or reinterpretation) occurs in a context of design parameters set by the brief (the "rules" of the "client" and the "budget").

He seems to see change as being at least partly driven by economic pragmatism ("when people have money they can spend"), but, as the third paragraph of the excerpts indicates, change and development are still held within the academic tradition of peer review and publication. How a designer

"accumulates this reputation" was not clear from the interview, except perhaps in the last sentence of the excerpt, where RO may be suggesting that it is knowledge – perhaps intellectual credibility – that earns certain Designers the respect of their peers ("people who know what they are talking about"). Development seems to be seen as related to worldwide movements ("this whole post-modern thing", for example) and to contexts ("this whole African thing"), but it is also related to "fashion" and to certain ideological positions ("work within the context of your time").

Two interviewees from Industrial Design provided similar perspectives to those provided by RO – except in one respect, where ZS had the following to say about what he considered important in the context of Design (he was responding to the question of what makes people influential in the field):

> ZS: Well, you start to look at the philosophy and approach and it becomes important to you about what it is that you are doing. . . .
> AC: . . . What forces influence . . . whether the knowledge in the field changes? . . .
> ZS: . . . accidents that happen [for example] that Chernobyl meltdown. I mean overnight the whole fashion industry just went into autumn shades, to try and get back to a natural thing. . . . I don't know what [the World Trade Centre attacks] will do, but there will be a re-look at . . . what do we want out of our lives.

In essence, these comments by ZS suggest that knowledge is contextualised through, amongst other things, a "philosophy and approach". There would seem to be a moral or ethical dimension to what ZS is saying here, about Design operating within what is "important to you". Perhaps this is similar to RH's earlier comments about people "making their marks". ZS's comments about relationships between cataclysmic events (for example, the Chernobyl Nuclear Power Station leak) and Design "re-looking" at itself seem to echo RO's comments about world movements being associated with change. However, ZS's comments add a dimension to change that suggests that it is not always gradual or incremental.

Two of the participants in the study were located in the History of Art and Design, and we present excerpts from one of these interviews:

> JVD: A lot of [knowledge in the discipline] comes from . . . book knowledge . . . it comes from your studies that have been passed on from other people. . . . then also through visually encountering . . . artefacts or design or paintings or whatever you're looking at. . . . And . . . through people sharing their knowledge that you've actually come into contact with. . . . Usually it's some form of artefact . . . would be looked at . . . and then also looking at the context: historical context, social context, political context . . . and then also ideolog-

> ical: what informs the design to look as it does. . . . When you're dealing with Design, . . . there is a . . . certain subjectivity which comes into play . . . often unconscious subjectivity, rather than strict sort of rational logic . . .
>
> . . . the knowledge base that we deal strongly with is a Western knowledge base . . . but we also deal with, um, the Eastern and . . . African . . . artefacts . . . what we look at especially in terms of the Eastern and Africa is the shaping of the knowledge base that we have from a Western point of view . . . in terms of . . . what is authentic and how is value attached to something. . . . there's quite a strong critique of the fact that . . . standards of value and acceptability and authenticity are structured on a Western model . . . so the conceptualisation of what we would see as being art, isn't thought of as being art . . . within African culture very often . . . some of the characteristics [of Western Art and Design History] like balance, harmony, perfection . . .are upheld quite strongly.
>
> Change [is brought about by] social, political and ideological belief systems . . . then there's also that idea . . . of Revisionist Design and Art History . . . you actually find out that there were . . . people that were seen as being minor, or women, or whoever . . . that are now looked back and recognised but not during that time and not according to the Art critics or the people that were actually taking down that information and teaching . . . there were some very influential critics that were writing and promoting their work within magazines and radio . . . it depends on . . . who's funding, who's writing about and reporting about . . . [Now] there is a very strong focus on inter, multi, trans-cultural . . . kinds of influences . . . being open to . . . other cultures . . . that idea of multiplicity . . .

JVD's comments in the first paragraph of this extract appear to echo comments in previous excerpts: that there is an academic component to the knowledge-base. For her, the academic component seems to include the visual ("artefacts") and the interpersonal ("people sharing their knowledge"). As with RO, she also highlights "context" (historical, social, political, ideological) as an important dimension of knowing and understanding. Her reference to "subjectivity" in the first paragraph of this excerpt may parallel RH's earlier notion of "individual" knowing.

The second paragraph of this excerpt suggests that "critique" of context – especially the Western knowledge base – plays an important role in change in her discipline. She indicates in the third paragraph that this critique can lead to the reframing or reconstituting of what had perhaps formerly been seen as without value. Her references to Revisionist Design and to people being "now . . . recognised but not during that time" seem to support this point. The third

paragraph of this excerpt also provides some comment on how change can be linked to power. JVD's comments about "some very influential critics" and "it depends on . . . who's funding, who's writing about and reporting about . . ." provide some insights into what makes ideas or movements within this discipline powerful. RH had earlier suggested that change came through individuals being "radical"; RO had suggested change being related to "people who know what they are talking about". Here, JVD introduces an element of power being related to money and personal 'clout', and to ideas and movements being 'fashionable' or 'popular' or 'appropriate' in time and place. Her idea in the last sentence of the extract is that "cultural multiplicity" is the current force driving the way her discipline structures knowledge and approach.

This notion about how power is constructed in a discipline is also referred to by one of the participants (BV) not detailed in this analysis, who had the following to say in response to the question, "What makes people influential in the discipline?" His comment seems to indicate the complex relationships that surround power in a discipline sense: at least partly, intellectual strength and professional reputation; political opportunism; and financial backing.

> BV: . . . I think it's a worthwhile political game . . . You must obviously have a track record . . . in Design . . . but . . . it's political interest. . . . Because the [company name] believes in the interest, involved with the importance of promoting Design, and therefore says, fine, we'll sponsor you and your advertising.

The last detailed excerpt we present comes from our interview with a participant in Clothing Design and Technology:

> WH: . . . most of the knowledge . . . comes from two sources, one being the industry [and the other] the library and journals and books, magazines . . . a third source . . . has been contact with overseas institutions. . . . I don't want [students] to divorce creativity from management . . . I find it far more interesting to create with people, 'cause you create a system, you create a process, you create it all with people in order to obviously manage other people. . . . [I use] lateral thinking . . . I get a lot of information from the Internet . . . Emotional Intelligence, um, those kinds of books . . .
>
> [The discipline changes because of] the real world . . . and where South Africa is placed in a global economy: everything has changed. . . . Management disciplines have changed so much . . . the environment changes management . . . If the person changes, then management will change as well because it's about people. . . . it all depends who you want to manage . . . fashion has a role to

> play, in what is a fashionable Management Theory at the time. . . . Management is not something that you can divorce from a human. It's almost like a religion . . . it is as volatile and dynamic as that . . . different countries have different management styles . . . there are definitely conflicts in what management is and what it should be. Um, having said that, obviously for the purpose of teaching you need structures that says [sic] this is this type . . . But you decide . . . which of these you need or which combination you need.

WH's comments about discipline knowledge appear to parallel those of others excerpted in this paper: knowledge is built both academically and professionally. He makes a point towards the end of the excerpt that "for the purpose of teaching you need structures . . ." in relation to "what management is and what it should be". This point suggests that the academic context plays a role in the shaping of knowledge and what constitutes legitimate knowledge. RH earlier had made a similar point in saying that students are "shaped" by the teaching-learning situation, although he had not explicitly said that the teaching-learning context was a legitimate source of knowledge. JVD had suggested in her interview that a "Western" knowledge base had been the source of knowledge legitimation in her discipline area, but that this was now changing.

WH also draws attention to the notion of "fashion" in relation to Management Theory, where previous interviewees had highlighted other forms of "fashion" and "music" as being influential in shaping their disciplines. It seems, WH is here using "fashion" as synonymous with "trends in the discipline", where other interviewees had also suggested that trends outside the discipline were influential. This last point is perhaps best illustrated by comments of another interviewee (JVG) who has not been discussed in any detail in this analysis. In response to the question about what constitutes knowledge in her discipline (Graphic Design and History), she commented:

> JVG: . . . the canons of knowledge are European in origin . . . the more traditional kind of academic sources [but] I think the whole . . . area of popular culture . . . is also where knowledge comes from . . . like music, movies, visual information that we see around us all the time. . . . I think that has become or is [sic] recognised as being absolutely valid areas of knowledge, of study.

A common theme through what the above respondents have said about popular culture seems to be that it is part of what shapes their disciplines. In some cases (as RO seems to state it), the discipline is seen to be reacting to fashion or popular culture. In other cases, academics see themselves as regulating the role that fashion and popular culture play in the discipline.

Concluding comments

We are interested in the diversity of views, of this relatively small number of academics and professionals in the Design discipline at this institution, about how knowledge is arrived at, structured, developed and contested in their discipline. It seems to us, however, that there are important patterns in what these academics are saying, namely that their knowledge-base is eclectic; that it is structured and developed by academic and professional forces and demands; and that its contestation is a fluid and dynamic process of consumer demand, socio-cultural forces and personal and professional hegemonies.

Although all these academics appear to agree that their knowledge-base is eclectic (multi-sourced), there would be seem to be a tension in their perspectives between viewing knowledge as inherently conservative (passed down) and viewing knowledge as uniquely individual (trusting one's own contribution). There would also appear to be a tension between viewing knowledge as stemming from formal academic sources or from popular culture. This is not to suggest that these academics see these two sources of knowledge as bipolar or mutually exclusive. However, their views of the valuing of these two forms of knowledge carry important implications for the teaching of students, particularly students who may carry absolutist epistemologies of knowledge.

The fact that these academics view their knowledge as being structured by professional, historical or philosophical contexts is perhaps most strongly a reflection of the relativism of their perspectives about what is valued and when it is valued. However, here too there seems to be a tension between those who see the historical context of their knowledge as giving it its dominant structure, and those who see the professional context as the dominating one. The historical context seems to give to all knowledge a temporal and value-laden relativism; the professional context seems to structure knowledge according to economic and client imperatives.

As far as change and contestation of knowledge are concerned, these academics seem to view change as integral to their discipline. For some, commitment to change and to an awareness of the forces that bring about change are important aspects of understanding the Design field to be a political and socio-cultural site of contestation. For others, commitment to change seems more related to maintaining professional relevance and serving the needs of clients.

Perhaps the fact that these academics take the view that knowledge is relational, time and context bound, and values-laden is an important indicator of their own states of intellectual maturity in Perry's terms. We believe that these academics are saying that they come to know in their discipline through processes of exposure to multiple sources of knowledge; through

trusting and evaluating their own and other authoritative judgments; through understanding the cultural relativity of benchmarks; and through an awareness that multiple perspectives in the discipline are at least in part related to prevailing postmodernist, deconstructionist and revisionist processes of viewing historical and current knowledge.

We also believe that what these academics are saying poses important implications in an academic institution for what is taught and how it is taught. We think it is important for academics to be continually reflecting on and reviewing their own epistemologies of knowledge and to be assessing how their views interact with students' views of knowledge. We think that the contrasts between professional and critical views of knowledge as illustrated above pose important implications for how these different views about knowledge are presented to students and what they (the students) understand by perceived conflicts amongst their lecturers. This would seem especially important in relation to how learners' own ways of knowing are developed in the discipline, and would tie in with Perry's notions that an important goal of teaching is to be continually challenging 'dualistic' student epistemologies in the direction of greater intellectual maturity.

In conclusion, we think this research also suggests fruitful lines of further exploration, such as the extent to which the views of knowledge of these academics in a Design School would be found to be similar to or different from those of academics in other disciplines; the extent to which these differences or similarities could be said to be related to the canons inherent in the disciplines; and the impacts on student learning of these different views of knowledge.

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