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Influences on personal understanding: Intentions, approaches to learning, perceptions of assessment, and a 'meeting of minds'

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Abstract

Using a case-study approach, interviews with four final-year psychology students showed different approaches to learning and varying experiences of teaching in courses assessed through open-book exams. Analysis of their experiences, supported by previous research findings, provided insights into the reasons for the contrasting approaches being adopted. Some students reported misperceptions of the purpose of the open-book format and failed, but a changed perception of the assessment, later on, made them more aware of having to adopt a deep approach. In other cases, perceptions of teaching, and of the tutor, played an important part in the students' readiness to develop a personal understanding, bringing in both cognitive and affective influences. In our sample, we found evidence that teaching-learning experiences involving feelings of acceptance and encouragement, with mutual respect of each other's thinking and reasoning, could provide students with the freedom and confidence necessary to develop academically valid, personal understandings through a 'meeting of minds'. Where such respect and encouragement was lacking, the pursuit of personal understanding was curtailed, and passing exams seemed to become the main concern.

Key words: academic understanding; approaches to learning; open-book exams, perceptions of exam demands; meeting of minds.

Introduction

The importance of adopting a deep approach in developing academic understanding was made clear in the research carried out by Marton and Säljö (1984). However, that formulation presented too simple a picture of the individual differences in students' approaches and, over the years, other investigators have been extending this picture, and also looking at influences on those approaches (Biggs & Tang, 2011; Entwistle, 2009). The present study continues this process through in-depth case studies of four students who were studying in courses assessed by open-book examinations.

One important reason for adopting the open-book format is to encourage a greater openness in teaching and learning activities that allows students to become more aware of both the nature of the subject and their own ways of learning about it. The aim of this research was to investigate the fine detail of these students' approaches to learning, based on their reflections on experiences with different tutors, as they initially came to terms with the meaning of the content, and then prepared for the examination.

Previous research into effects of teaching and assessment on student learning has used both qualitative and quantitative methods. The first studies tended to make use of existing psychological constructs, such as motivation, cognitive processes, and metacognition, and to use large-scale survey methods, but the generality of such concepts limited their usefulness when describing those learning strategies specifically adopted by students within the university context. In the 1970s, a new approach to qualitative interviewing and analysis was developed that allowed contextually specific concepts to be developed, based on the responses of successive small groups of university students (Marton, 1976). These concepts were then operationalised for use in inventories with large numbers of students, to establish general relationships between these new concepts (Entwistle & Ramsden, 1983). Although numerous studies have since been using increasingly sophisticated quantitative approaches to explore the relationships in more depth (see, for example, the review by Baeten *et al.*, 2010), there have been few qualitative studies that have adopted case studies. We chose to use this method to foreground particular influences on student learning that have been less clearly seen when using other research methods. The procedure also allowed us to explore, with each student, how their approaches had changed over time and through changed circumstances, and to obtain their explanations of why those changes took place. A case study also provides a fuller picture, both of the individual student as a learner and the teaching and assessment experienced. Such findings can lead to a greater understanding of, and better theorizing about, students' learning (Stake, 2005). But the small sample size, and the use of interpretative analysis, means that conclusions have to be considered cautiously, in the light of existing research into student learning.

Evolving ideas about approaches and understanding

The nature of the learning involved within a deep approach

The method of interviewing and analysis developed by Marton and his research group led to the description of *approaches to learning* in terms of a distinctive intention in approaching a study task, and then using specific learning processes to carry it out (Marton & Säljö, 1984). Within a deep approach, the main intention is to understand for oneself, extracting personal meaning through relating ideas, and by using appropriate evidence to justify conclusions (Marton, 1976; Marton & Säljö, 1984). Within a surface approach, in contrast, the intention focuses on completing the task or passing the exam, often with a reliance on rote memorization and over-learning (Entwistle, 1987). It became clear in later research, however, that students adopting a deep approach sometimes also reported memorization; indeed, rote learning of technical terms is an essential prerequisite for developing conceptual understanding in some subject areas (Entwistle, 2009).

Other research has stressed the developmental nature of student learning in terms of *conceptions of knowledge and learning*. Perry (1970) described how students gradually come to recognize the essential uncertainty of knowledge and to understand how academics use evidence to establish their conclusions (*relativistic thinking),* rather than simply expecting 'right' answers to be provided for them by the teacher or text-book (*dualistic thinking)*. These ideas have been developed further to

explore the implications of this 'epistemological development' for teaching at university level, indicating the importance of making students more aware of the nature of knowledge and providing a climate within which students feel confident in developing their own ways of thinking. (Hofer, 2001).

Säljö (1979) showed a parallel development through which students show an emergent *sense of identity* as a learner as they move from seeing learning simply as memorizing information to recognizing that it involves understanding for oneself and ultimately developing as a person (Marton Dall'Alba & Beaty, 1993; Van Rossum & Hamer, 2010)

Approaches to learning also are developmental, with more sophisticated conceptions of learning emerging through experiences of teaching and assessment (Biggs & Tang, 2011). Conceptions are believed to be more stable than approaches, and recently it has been suggested that there is also a strong and consistent form of the deep approach that exists as a *disposition to understand for oneself*, in which the willingness to learn is accompanied by both ability and metacognitive awareness (Entwistle & McCune, 2009).

A recent study has taken the examination of learning processes even further. Hay (2010) has described academic understanding as growing out of the *inter-animation* of 'voices', the bringing together of ideas and evidence from a variety of sources through conversations, reading and experience, so that meanings of the connections and contrasts among them gradually become clearer, and personal understanding is achieved. This grasp of the subject develops further as students begin to listen to the different 'voices' that have contributed to the current position reached in the subject, and as they gain confidence in interpreting that interplay of ideas for themselves (McCune, 2010). It was also clear in Hay's study that listening to these 'voices' could create a sense of relationship with the people who had expounded those ideas, whether or not the students have actually met the authors. But the actual relationship between teacher and learner remains a distinctive feature of university education that influences learning (Northedge & MacArthur, 2009).

In another line of research, Entwistle (2009) investigated students' approaches to preparing for their final degree examinations in relation to their understanding of their subject area. The main difference was in the extent to which the students relied on their teachers to provide answers for them to reproduce (echoing the idea of dualism), or developing their own personal understanding, which could be either narrowly focused on passing the exam, or more broadly on coming to appreciate the nature of the discipline (relativism) (Entwistle & Entwistle, 1997; Entwistle, 2009).

Approaches in relation to teaching and assessment

While Marton and Säljö (1984) made clear that an individual's approach to learning is affected by both the content of the topic being learned and the context within which the learning is taking place, their naturalistic experiments did not investigate the specific effects of teaching and assessment on approaches to learning. Students differ in how *strategic* they are in adapting their learning to the perceived exam requirements, by using well-organized study methods and using well-directed effort (Entwistle & Ramsden, 1983; Entwistle & McCune, 2004). Students adopting strategic approaches draw on deep or surface learning processes differentially, depending on their perceptions of the 'pay-

off' in terms of grades, and also what they believe to be required in exams. Essay-type exams, for example, are generally believed by students to depend on understanding and so encourage deep approaches, while multiple-choice tests are thought to need only memorization, leading to surface approaches (Thomas & Bain, 1986; Gardner, 1994).

Approaches to teaching are also found to affect approaches to learning. Not surprisingly, teaching directed towards conceptual understanding encourages deep approaches, while teaching that is focused on transmitting knowledge generally leads to surface approaches (Trigwell, Prosser & Waterhouse, 1999). But students respond to teaching in different ways; it is the interaction between their approaches to learning and their perceptions of teaching that affects the outcome of learning (Richardson, 2006). Where they are *consonant,* students feel comfortable in their learning, but where they are *dissonant,* learning is disrupted (Meyer, 1991; Lindblom-Ylanne & Lonka, 2000; Lindblom-Ylanne, 2003; Parpala, Lindblom-Ylanne & Komulainen, 2010), an effect also described as *destructive friction* (Vermunt & Verloop, 1999, 2000). The more general effects of teaching-learning environments on learning processes have been reported by Vermunt (2007), Entwistle (2009) and Baeten, Kyndt, Struyven & Dochy (2010).

Open-book examinations and deep approaches

Although essay exams do seem to encourage deep approaches, the effect should be more marked using open-book exams (Biggs & Tang, 2011). This approach can be seen as having the characteristics of *sustainable assessment,* which Boud (2000) suggests "meets the need of the present without compromising the ability of the students to meet their own future needs" (p.151). There is, indeed, a tendency for students taking those exams to report higher levels of motivation, better engagement with the tasks in structuring and mastery of content, and a greater optimism about the forthcoming exam than those taking the closed-book format, where the emphasis is more on memorization and the reproduction of factual information (McDowell, 1995; Theophilides & Koutselini, 2000).

The open-book exam is designed to enhance meaningful learning and to encourage students to construct their own understanding. However, a recent interview study suggested that students' differ in their reactions to the open-book format (Karagiannopoulou, 2010). Asked about their study strategies for developing understanding, some students reported elements of both deep and surface approaches in preparing for such exams. For the open-book examinations, the five students (out of the twenty) who shifted approaches reported elements of a deep approach for the understanding of the material. However, they appeared to be strategic/surface in terms of organising their studying to meet exam demands, falling back on the tutor's perspective when they lacked confidence.

This finding led directly to the current investigation. It seemed important to discover the source of the differences in approach, and in particular to consider what experiences would facilitate or inhibit students in becoming active agents in their learning, a way of thinking that Barnett (1999, 2000) believes to be crucial in preparing them for playing their part in a 'super-complex' society.

A heuristic framework describing influences on students' understanding

This brief review of the literature suggests some of the main influences on students' development of their own personal understanding of topics being studied: conceptions of knowledge and learning (Perry, 1970); learning identity (McCune, 2010); the effects of consonance/dissonance (Vermunt, 2007); approaches to learning and study strategies in relation to exam demands (Theophilides & Koutselini, 2000). The review also indicated different ways of investigating relationships between such variables, including quantitative methods such structural equation modelling (e.g. Diseth, 2007; Diseth *et al.*, 2010) in seeking evidence of causality. The relationships have also been explored conceptually, leading to various frameworks showing influences on student learning (Entwistle & Peterson, 2004; Entwistle, 2009). From these, we have developed the heuristic model depicted in Figure 1 to guide the analysis and interpretation of the case studies, based on a more complex model developed by Entwistle (2009). Its purpose is to guide thinking about the complexity of potential influences of the quality of understanding, rather than to be definitive. It was used, here, to help us clarify the design of this study.

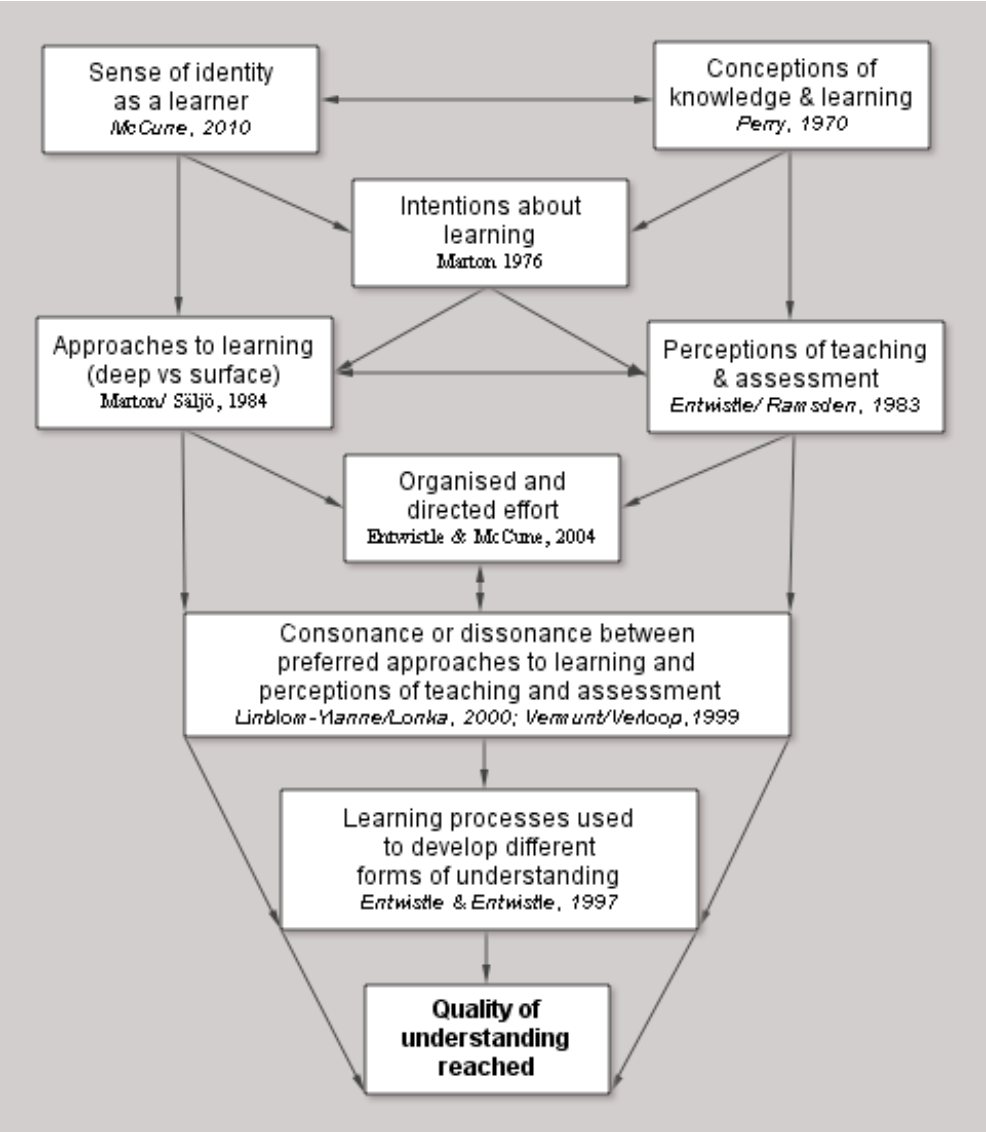

Figure 1 Heuristic framework, describing influences on students' understanding

Figure 1 shows the origin of the various concepts used in this study, and also indicates the directions of influence suggested in previous studies (Entwistle, 2009; Biggs & Tang; 2011; Lindblom-Ylanne, 2003; Lindblom-Ylanne & Lonka, 2000). It also shows that some of these influences have been found to be bi-directional (Richardson, 2006). The sense of self as a learner and conceptions of academic learning are established in earlier learning situations and influence the approach to learning initially adopted and the effort applied. That approach, in turn, influences how both teaching and assessment are perceived by the students (Sadlo & Richardson, 2003; Richardson, 2006; Richardson, 2010), but is also affected by those perceptions and by the extent to which the teaching is consonant or dissonant with their preferred approaches (see Meyer, 1991; Lindblom-Ylanne, 2003; Vermunt and Verloop, 1999). Students have been found to revise with differing focuses of attention, some trying to develop and understanding for themselves and others relying on mimicking the lecturer's understanding (Entwistle & Entwistle, 1997), mirroring the distinction between deep and surface approaches. Taken together, these influences, and others, affect the learning processes adopted and the level and quality of personal academic understanding reached.

This heuristic framework is designed to indicate general influences on reaching a personal understanding, but such a general model gives no indication of the dynamics of an individual student's academic progress. The case study approach can offer valuable insights into such influences and processes, with approaches to learning being be seen through the eyes of individual students, who can explain what influenced their approaches to learning, thus providing another form of evidence of causality. It is accepted, however, that definitive conclusions cannot be reached from the small number of cases that a detailed analysis of individual responses necessitates: our findings are thus indicative, intended to provoke reflection and further research.

Methodology

Aim

The aim was to explore the experiences of final year undergraduate psychology students preparing for open-book exams in relation to influences on their approaches to learning and studying. The analysis focused on the interplay between intentions, learning processes, and perceptions of both the teaching experienced and of the open-book exam format.

Context

The students interviewed were in their final year of a joint degree course involving philosophy, education and psychology. This combination of subject areas influences, to some extent, both the range of subject matter included and the approaches to teaching. Each of their courses had been taught by a single tutor, who could choose to use either a closed- or an open-book exam to assess the students. It was the same tutor who set the essay questions and evaluated the answers.

Sample

Four female fourth year undergraduate psychology students were chosen as case studies from a set of 20 (mainly female) used in the previous analysis (Karagiannopoulou, 2010). The choice of females represented a substantial majority of the courses included. They were selected on the basis of their descriptions, in these earlier interviews, of extensive and contrasting descriptions of developing understanding and of their contrasting perceptions of the teaching and exams. This choice then provided the necessary variation for the analysis. However, it is recognised that an all-female sample will have implications for the interpretation of the findings.

Data collection

The interviews were semi-structured and individual. They were conducted a few weeks before the semester examinations, and were recorded. The interviews lasted almost an hour. The initial interview schedule included two sections concerning preparation for open and closed book, essay-type examinations. In the current study, analysis has focused on the open-book examination. Students were asked to reflect on their experiences of revising for these exams and then to describe and explain as far as they could: their intention in studying; their revision

activities; and how understanding was developed in preparation for open book examinations, and in relation to exam demands.

The interviews were carried out following the method often used in phenomenographic research (Marton & Booth, 1997). Students were prompted to explain their learning activities, focusing in particular on their ways of preparing for the open-book exam. A conversational style of interviewing was used in order to encourage students to reveal as fully as possible their approaches, and their reasons for adopting them. The technique allows the interviewer and interviewee to work together on the interviewee's reflections on the issue of interest, to bring the interviewee back to the focus of reflection and offer interpretations of the information reported earlier by the interviewee. This form of questioning allows checks to be made on the consistency of the self-reporting as the interview progresses. The four students presented here as case studies gave a substantial amount of information and an extensive account of their thinking and learning experiences, while the interactive form of interviewing enabled students to explore for themselves previously unfocused learning experiences.

Data analysis

The four transcripts were read repeatedly by each author in relation to the aims of this new analysis and interpreted independently in relation to relevant concepts and categories established in previous research. To ensure that the conclusions drawn from the study reflected students' descriptions of cognitive activities and strategies employed in preparation for the exams, the emerging descriptions were constantly tested and refined to ensure they represented the individual student' perspective. The analysis did not follow normal phenomenographic procedures (see Marton & Booth, 1997, pp.132-135), as we were using pre-existing definitions of the main concepts shown in Figure 1 to explore students' reactions to open-book exams, and their attempts to develop personal understanding. However, we left open the possibility that our analyses would identify additional aspects not included in previous research, and so create new categories of description. Whenever either author identified any such possibility, it was then discussed thoroughly in relation to the relevant literature until agreement about its description was reached. Grouping of pre-existing concepts was also carried out to create themes within which extracts from the interviews could be selected to provide indicative responses for each student. This procedure led to the identification of four aspects that appeared in each of the transcripts: *intentions and sense of identity* as a learner*; perceptions of the open-book exam; conception of learning and approaches to studying;* and the *meeting of minds as a relational experience.*

5. Results

In this section we try to convey the full sense of each student's reported experience and begin the process of interpretation through insights that appeared after the first phase of analysis, leading to more detailed interpretation within the Discussion section.

5.1 Student A

Intentions and sense of identity

This student expressed a clear sense of herself as a learner as she started higher education, showing an initial reliance on the books and class notes, due to a lack of self-confidence and previous habits of studying.

> I'm a kind of person who believes that I can trust only the 'formal' sources of knowledge. I trust myself only when I have gained a good amount of knowledge on an issue. I can then feel confident to put ideas in my own words, to present what I think an issue is about.

This reliance on 'formal sources of knowledge' might well have been adequate for a closed-book exam, but this strategy led her into difficulties with the open-book format, as she expected to be able to reproduce her notes without too much trouble.

Perceptions and experiences of the open-book exam

> I attended the lectures and had a good set of classroom-notes. I read through my notes three or four times. I didn't get into much depth because I could look up any information I needed to develop my answer. I failed. The second time I took this class, I repeated the process. Tutors usually expect an answer close to their lectures. I felt I had understood the content, and I used in my answer the information presented in the lectures. I failed once again.

This experience of repeated failure forced her to rethink her approach to learning, which paid off in the exam, but she still had not fully grasped the nature of the open-book exam, as she was still hoping to be able to use her notes in reproductive manner.

> [This year] I sat for the exams having all this material with me and I got B. I read through my notes once and I put them aside. I answered the question almost automatically. I was not off the track. I don't have a clear idea of what was the crucial thing that, this time, made my answer so good. I'm never clear of what the tutor wants us to write in an answer, how she approaches an issue.

Conception of learning and approaches to studying

Here we see a clear indication of a student who starts with a reproductive or dualistic conception of learning.

> I prefer to rely on the author's and tutor's ideas: they're correct. If I deal with new information I reproduce both the structure and the phrasing. If I lack previous knowledge, it is highly likely to get it wrong.

But the change in approach in the final year is paralleled by a recognition that learning at university demands a more reflective conception: understanding for oneself becomes obligatory.

> For me understanding means to be able to put ideas and meaning in my own words, link them to knowledge from other classes and personal experiences - to know how they relate to each other.

Along with this changed conception came a different way of tackling her academic work, giving an indication of an attempt to reach personal understanding through the recognition of the different stances she was meeting and how they might shape her own ways of thinking.

> I tried some studying beyond the lecture notes. I found two books in the library that included most of the issues presented in the class. I attended lectures, I took notes and I then read through the relevant book chapters. ... Eventually, I identified the most significant concepts presented in the lectures. I wrote key information supported by evidence on a separate sheet.

Meeting of minds as a relational experience

In spite of these efforts, her approach remained hesitant. She still seemed to believe that passing the exam depended mainly on keeping close to the tutor's ideas. Her difficulty in transforming perceptions of exam demands and conceptions into disciplinarily appropriate ones is associated with a sense of confusion that suggests no real 'meeting of minds'.

> I know that there should be a logic that runs through the papers and tutor's thinking… I know that there are high demands but I still can't see clearly what's her perspective, how it is inferred from the subject rationale. What's the point she wants to make…it's her own "world"… I know there is something there, which I'm expected to present in the exams, but I'm not clear about it.

5.2 Student B

Intentions and sense of identity

This student was getting low grades early on in the course, but by the third year she was showing intentions more closely related to a deep approach. She did not explicitly indicate a sense of identity as a learner, but this is implied by her desire to develop her own independent understanding. However, she also showed a strategic intention (deep-strategic approach) to make sense of the tutor's perspective, as a way of helping her succeed in the exams. The two types of intentions suggest a tension between the wish to see things in a way that is meaningful for herself and her perceptions of what is required in the exam.

> I had to improve my revision to pass. I decided to get into real understanding … to get into the tutor's thinking, … not just to get a quick understanding and mark the significant points to use in the exams. … This was not easy at all. … To recognize how the tutor approaches an issue, in order to answer an exam question, I have to understand it for myself, why she sees an issue this way or another… To be able to argue about it in an appropriate way indicates that I have been deeply involved in understanding.

Perceptions and experiences of the open-book exam

Like Student A, this student had also started with a mistaken idea that, in an open-book exam, she would be able simply to reproduce ideas from her lecture notes.

> In the first year of my study I thought that the open-book exam was easy. I just romped through the examinations. I was able to recognize the pages where particular information appeared. In the exams, I did some copy and paste work… I had failed in three classes.

By the third year, she seems to have recognised what is really required to meet the open-book exam demands.

> [In order to succeed] I had to take into account tutor's demands and understand her perspective... This means trying to understand what's going on in this area. In the exam answer I take into account how she believes the arguments to be developed and supported by evidence.

Residues of her previous misperception of exam demands appear in her description of an uncritical mimicking of aspects of tutor's articulation of arguments, in an attempt to succeed in the exams.

Conception of learning and approaches to studying.

Here we see a dualistic conception of knowledge in preparation for the first year exams paralleling the initial intention to reproduce knowledge. But by the third year of her studies, this student has reached a more sophisticated conception of academic knowledge and learning, which came out of experiences of tutors who treated students as active agents for their learning.

> The goal of teaching for most of the tutors is to get us into real understanding. They want us to be able to make the subject knowledge part of our understanding of the world, to be able to conceive things around [us] through the lens of the new knowledge, … to grasp the gist, and use it in the exams.

This experience is paralleled by her approaches to studying. Her description of her own thinking suggests both identification with, and separateness from, the tutor's thinking, leading her into new thinking paths through an interrelation between the two.

> It's her thinking that gives direction to my thinking. I'm thinking about whether I agree or disagree…If I agree I think about more situations, use personal experiences and previous knowledge, drawn from other classes or from this class. If I disagree, I focus on the difference and what it consists of. If I have difficulties, I put myself into her shoes and try to understand how she might be thinking on an issue.

The process of agreement and disagreement has become part of an internal dialogue, drawing on the inter-animation of different perspectives to develop a personal understanding and trying to imagine how an academic might think about the topic being studied, although this was not always successful.

> I follow her line of thinking and I try in a role-playing situation to think as an academic. I follow the chains of thoughts she would possibly use and I speak out my thoughts and arguments… [but] if I lack the knowledge, the chain breaks, and then … get into rote learning.

The need to think 'in relation' to the tutor seems apparent, even when it fails due to an inadequately developed understanding of the tutor's thinking.

Meeting of minds as a relational experience

By the third year, the 'mission' of higher education as a transformative experience had been recognized, and how tutors sought to prepare their students for the demands of the open-book exam.

> Tutors want us to construct new explanations and interpretations using the new knowledge and present it in the exams. This is what higher education is about. But some tutors (hopefully few) are teaching just for the sake of teaching. They don't care about their contribution to our development.

The way she points to both positive and negative teaching experiences indicates a clear awareness of the effects of teaching on learning developed in parallel with stronger deep approach and the

advanced conception of learning. Teaching and learning are seen to take place in a relationship with the tutor that can contribute to individual intellectual development and make possible a 'meeting of minds', but only where that tutor shows a concern about the student's development.

5.3 Student C

Intentions and sense of identity

The link between intentions and a sense of identity could not be clearer in this student's comments.

> I always try to make sense of the information, to draw my own conclusions… That's me. This happens irrespective of whether tutors ask us to get into more depth...

Perceptions and experiences of the open-book exam

Student C believed that the open-book exam would provide her with an opportunity to use her own experience and present her own ideas on the subjects studied, but she interpreted experiences of failure as contradicting that expectation, leading, as we shall see, to a marked change in strategy.

> Tutors ask us to develop our own understanding, but they eventually want us to reproduce their ideas. I don't believe in critical thinking in higher education; most of the tutors want our answer to be…what they think on a particular issue. I've failed in subjects for which I had got into great depth… [so I can't bother to present personal understanding.

Doubt and uncertainty seem to underlie such experiences and prevent the demonstration of personal understanding, leading to 'safe' strategies since the marking criteria and the exam outcome are seen as unpredictable.

Conception of learning and approaches to studying

Understanding was seen to be the main intention and involved a clear conception of learning at university as requiring personal understanding.

> Understanding means studying in a way that enables you to link semantic information with mental images and keep them in mind; to create mental images to represent the knowledge. This transforms words into something vivid…

And the intention to understand for herself was followed through by a thoroughly deep approach to learning, with considerable use of her own experience and imagery, with visualization playing an important part in developing her understanding.

> [You think about] authentic experiences you have had and now it's like finding out the relevant interpretation. Sometimes, the text gives you the picture. You don't have to think of a personal experience and make up a picture in your mind. The title is like reading in anticipation. I develop expectations of what follows, even relevant images, and I'm trying, throughout reading, to find the relevant information.

In her studying, she was aware that her understanding had to be within the framework of the academic discipline she was studying, and that her tutor would show how concepts and evidence should be used.

> What matters is to grasp what's going on in a field. A lot of it appears in the lectures…the concepts that constitute the main theoretical tools for the tutor. These concepts are likely to appear in the exams and have to be used as theoretical tools in my answer. There is usually coincidence of what the tutor presents as important and what I perceive to be important.

Elements of independent learning seem to coexist with awareness of convergence or divergence of her perspective with that of the tutor. However, she appears to perceive these perspectives as distinct.

Meeting of minds as a relational experience

When it comes to preparing for the exam, the intention to pass overrode the previous intention to understand for herself, and led her towards a highly strategic, and ultimately more reproductive, approach.

> I underline the most important points, I understand each lecture separately and I then read all of the classroom-notes following the date sequence. I think that there is a logical sequence of concepts. This is the tutor's logic which I follow in revising. I sit for the exams having focused my understanding on the classroom notes.

There is a tension between a strong continuing disposition to understand for oneself and the necessity of passing the exam. She reverted to the strategic surface elements, not out of a failure to understand, but out of the feeling that her own understanding would not be valued by the tutor.

> [In the past] I presented my own perspective [in the exam], I was critical to the theories and I failed. Now, I develop my answer close to the tutors' ideas, adding only few personal thoughts, if necessary… [giving my own views] is not any good for me: [there is] no better grade [and] no appreciation of my attempt [to offer my own views].
>
> I feel humiliated…They treat us like machines; we're asked to regurgitate knowledge. I'm a kind of person who is always seeking meaning, but I can't be bothered any more to develop my understanding in ways that meet the tutors' [demands] or in ways approved by them. My understanding is my own business.

A teaching-learning experience that demands students' excessive compliance and sameness, rather than independence and differentiation combined with diversity, seems to prevent the 'meeting of minds'.

5.4 Student D

Intentions and sense of identity

Here, we find clear evidence of an intention to understand for oneself, although the sense of identity could only be inferred from later comments about her approaches to studying.

> I always try to understand the issue at hand… I usually think a lot about which may be the concepts or ideas at the heart of the issue and how supported by evidence…I don't focus on details; I know, though, that there is more information that fits with the main concepts.

Perceptions and experiences of the open-book exam

It was clear that Student D grasped the nature of academic understanding through her experiences of the tutor's way of thinking about the subject. And she recognized that the open-book exams allowed her to relate her own thinking to the ideas presented by the tutor. There was thus no conflict between the perceived requirements of the exam and her own intentions and identity as a learner.

> Tutors try to get us into a new way of thinking, but mainly into developing a rationale… This is their main concern that makes us develop further. They're concerned about us being able to think critically on the issues we have been taught [and] to value for ourselves real understanding *per se*. They also expect us to be able to build up our own understanding of an issue through the lens of the underlying parameters. [And] this is close to what they want [us] to present in the exams.

Conception of learning and approaches to studying

It is already clear that this student sees learning as dependent on acquiring a personal understanding of the topic, and she does that by relying heavily on the tutor's own perspective, until she feels confident enough to test those ideas against her own experience and emerging understanding.

> I think understanding is to be able explain an issue to someone in order for them to understand it appropriately, to put the meaning in my own words to convey the author's meaning, to understand the notions and concepts presented and relating them to other issues, and to what I've seen happening out there. I try to think of what are the main concepts and ideas that make up the tutor's perspective/understanding. I get into it, and then this is what I take into account when thinking about possible questions and answers. It's the 'know-how' experiences I get from the lectures that enable me to approach any relevant issue…

The tutor's understanding apparently functioned as a spring-board for the student's own understanding. Putting herself in tutor's shoes opened up a particular thinking path, but one which could lead off in a different direction later, as other knowledge and personal experience were taken into account.

Meeting of minds as a relational experience

Throughout the interview, this student showed that her own ideas on learning and preparing for the open-book exam fitted closely with those she thought the tutor would want her to demonstrate in her answers. As a result there is a continuing meeting of minds within a learning relationship where the student experiences the tutor's understanding as separate from her own.

> [I try] to take a critical stance on the material. The germ of it can be found in tutor's thinking which is "feeding" mine. I have a direction, her perspective. This gets me into more thinking. I initially try to understand the issue, by putting myself in the tutor's shoes, … how she appeared to personally think on an issue, the issues raised again and again (her convictions). … You start with the tutor's

perspective, you bring in previous knowledge and experiences that get you to a different end from what you started.

In her use of her own experience, and through testing alternative perspectives derived from a variety of sources, we again see the inter-animation of ideas in developing personal understanding, and also a tolerance of uncertainty that indicates a relativistic conception of knowledge. The relationship with the tutor suggests an acceptance of the student's own ideas and perspective, with a tolerance that creates a intellectual space within which a 'meeting of minds' becomes possible.

Although this student described these deep-learning processes, focused on personal understanding within an academic framework, she also showed a strategic recognition of the way in which her learning would be judged in the exam. So, again we see the two intentions of understanding for oneself and being successful in exams, but in this case working in concert through a relational teaching-learning experience that allows a strong deep approach to coexist with a strategic awareness of assessment criteria.

Discussion.

The presentation of the interview extracts has already involved some discussion of the findings as part of our interpretative process, so here we concentrate on drawing attention to what we see as those findings most likely to add significantly to what is already known about student learning. Although the interpretations, so far, have been made in general terms, now the focus changes by drawing attention, first, to the specific context within which psychology was being studied, and later on to look at the implications of having an all-female sample.

The department chosen offered courses in philosophy and education, as well as psychology, and so the students had covered a broader range of courses than might be found elsewhere, and with the psychology programme itself introducing critical psychology and psychodynamic aspects, as well as the covering the more usual theoretical perspectives. The multiple perspectives created through this broad epistemological background is not unusual in Greek university education, and will inevitably have affected both tutors' and students' perspectives on teaching and learning.

Interactions between intentions and perceptions of exam requirements

One aspect that stood out clearly in our analysis were the parallels that could be seen between the students' intentions in their learning, their conceptions of what academic learning involved, the learning processes they used, and the mediating effects created by perceptions of the open-book exam requirements and their past performance in such exams. Of course, this pattern of relationships has been found in previous research (see Lindblom-Ylanne, 2003), but the individual dynamics involved appear clearly only when the experiences of students can be viewed holistically and in depth, as in our case study. And these individual dynamics enable student learning to be viewed in a more realistic and telling way.

One important aspect of the extracts was the extent to which these students had developed a sense of their own identity as a learner, which seemed to explain a good deal of their continuing study

behaviour, whether as a dependency on rote learning and mimicking the tutor's understandings, or as a determination to reach deep understandings through a critical attack on evidence and the interpretations of others, as seen in these illustrative comments.

I'm a kind of person who believes I can trust only the 'formal' sources of knowledge. (Student A)

I'm a kind of person who is always seeking meaning: that's something I'm used to. That's me! (Student C)

The students' perceptions of the requirements for the open-book exam were themselves influenced by the students' initial preferences for learning in a particular way. Thus Student A saw herself as someone who preferred to learn by rote. *(I read through my notes three of four times)* and she saw the open-book exams as being easy, since the material would be at hand. *(I didn't get into much depth because I could look up any information I needed to develop my answer.)* Belatedly recognizing that understanding was a necessity, she changed her approaches from surface towards deep, but her attempts were hampered by a failure fully to recognize the independent thought required for academic understanding.

Student B also saw the open-book exam as easy, and again poor marks led her into deeper approaches, but these were hampered by her inability to grasp the tutor's ways of thinking and so reverting to rote learning. (*I follow her line of thinking, but if I lack knowledge the chain breaks, I feel I have no choice: I get into rote learning).* And a similar reaction could also be seen in the descriptions of Student C. She had a strong intention to understand for herself, believed that the open-book exams would reward such understandings, and so learned in that way. But poor results suggested to her that the tutor had a different view of what was required and seemed to reward regurgitated understandings. She thus, reluctantly, shifted away from her preferred approach and relied more on a surface approach, accompanied by a strongly negative reaction to what she felt she had to do. *(Tutors ask us to develop our own understanding, but eventually they want us to reproduce their ideas.)*

Only Student D had both an intention to understand for herself, recognized the nature of academic understanding and found that the tutor was rewarding her efforts, and that seemed to depend on her relationship with the tutor, one that represented a 'meeting of minds'.

Meeting of minds as a relational experience

In the review of the literature, we mentioned the research by Hay (2010) in which he reported a case study of a student whose learning clearly illustrated how she brought together ideas from different sources and integrated them into her own personal academic understanding. In the process, she began to develop a relationship with the authors of the ideas, and described how she had begun to see those ideas as 'friends'. The initial relationship was with the ideas, but gradually a more personal sense emerged. These experiences were reported by a female student studying a subject with some affinity to psychology (neurology), and so it is not surprising that similar types of experience were reported in our sample. There were indications of the inter-animation of ideas in the comments with authentic experiences, previous knowledge, and teaching material, all seeming to play a part in developing a fuller personal academic understanding of psychology (Student C).

Our analyses across these case studies has led us to see academic learning, at least in the context of final year psychology in this department, as going beyond Hay's descriptions and involving a *meeting of minds as a relational experience*. Where this experience was positive, it combined cognitive and affective elements and provided the student with a sense of confidence to explore her own understanding more freely, using the tutor's ideas as a jumping off point for an independent critical analysis of the material being studied, sometimes leading away from the tutor's interpretations. This idea was seen most clearly through the descriptions given by Student D, although echoed by Student B.

'Thinking in relation' to the tutor's ideas enables the student to come to terms with different thinking paths in manageable 'doses', involving the exploration of both similarities/sameness and differences/diversity, and encourages understandings to become integrated within a learning relationship in a way that tolerates any differences (see Northedge & McArthur, 2009). Such cognitive activities go hand-in-hand with experiences of the tutor's concern for the student's intellectual development and her engagement with the values and norms of the discipline in supporting personal development (Baxter-Magolda, 2009). This concern also plays an important part in the students' growing awareness of the nature of knowledge and epistemological development (Hofer, 2001), while also contributing to Barnett's (2000) concerns about preparing students for an uncertain future.

The effect of a tutor's concern about a student's personal and intellectual development, the use of personal experiences to develop understanding, and the need for "thinking in relation" to develop understanding could well be seen as reflecting an underlying feminine way of studying psychology that involves feelings and emotions (Sanders, Sander & Mercer, 2009). A recent study has also reported male perceptions that psychology is seen as being essentially a feminine subject (Mercer *et al*., 2013). The researchers also discuss stereotypes about female psychology students as suggesting deep thinkers, with a more emotional nature and being more caring. It thus makes sense to infer that female psychology students might appreciate a caring academic environment more than men, and to also to have warmer relationships with academics who make them feel confident and valuable thinkers. Of course, this possibility is only speculative in this current study, but it does suggest an interesting topic for further research.

Conclusion

Our analysis helps to explain why elements of both deep and surface approaches were found within the same transcripts in the earlier study (Karagiannopoulou, 2010). In some instances, these were clearly attributable to incorrect perceptions of the open-book exams; in others, dissonance between their preferred approach and what seemed to be required by the tutor, through her marking or comments, led to the same effect. The contrast in the reactions among the students interviewed led us to recognize the importance of a *meeting of minds* between student and tutor, which can encourage exploration of personal understanding through a classroom climate that tolerates diversity. A lack of this relationship discourages the individual exploration of ideas and, in extreme cases, may create a feeling of alienation. This line of research seems likely to be extremely fruitful, particularly if it were

possible to interview tutors as well as a larger group of students, focusing on this particular aspect of the influences of the tutor on the development of personally satisfying academic understanding

Our study also has drawn attention to additional aspects of the learning experiences which go beyond those normally considered in relation to approaches to learning and studying, and the specific nature of the course and the sample suggests the importance of recognising how these aspects may affect the students' perceptions of both the teaching and the assessment they encounter. Besides looking at potentially different effects of tutors on student understanding, it would also be important to explore whether there are different reactions between males and females, and also across different types of subject content. Courses on statistical analysis, presumably, are likely to produce different forms of understanding than those courses with a more philosophical or psychodynamic orientation.

We have tried to illustrate, in this study, the value of systematically comparing the reactions of a small number of students with contrasting experiences of learning and preparing for exams. Even though such case studies can be no more than exploratory, they can suggest fruitful lines for future research and also encourage tutors to think about possible effects of their teaching. Looking at several influences on students' perceptions of assessment, and noting the emotional components involved in those perceptions, helps us to understand the complex nature of relationships between students and tutor that may lead to importantly different kinds of understanding. Where there is tension in that relationship, students may well lack the confidence to explore the subject matter for themselves, and so seek safety in mimicking the teacher's understanding. That form of understanding is, however, unlikely to last, or to be useful, except for fulfilling assessment demands. If we want students to develop personal understandings of psychology (or other similar subjects) that enable them to integrate theory and evidence, and also take account of personal experience, then the value of creating a classroom climate that encourages a 'meeting of minds' should be taken into account.

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