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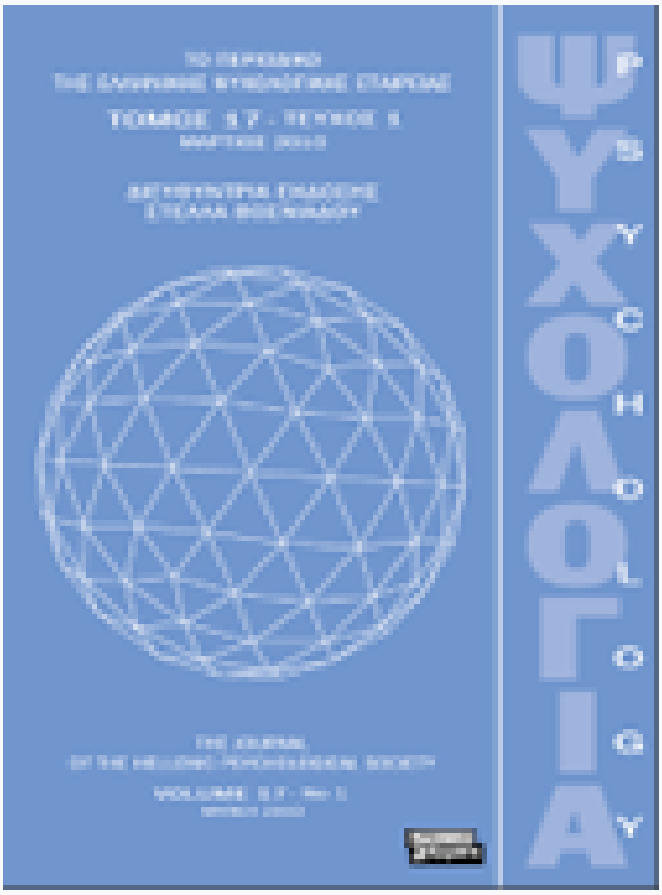

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Effects of classroom learning experiences and examination type on students' learning

EVANGELIA KARAGIANNOPOULOU[1]

ABSTRACT The study explores the effect of in-class experience and open and closed-book examinations on understanding. In-depth interviews were conducted with twenty final year psychology students. They were asked about their study strategies to develop understanding when revising for open-book and closed-book essay-type examinations, and also about their in-class experiences. The findings indicate the effect of in-class experience, as a both cognitive and emotional experience, on approaches to studying and of students' attitudes to the differing forms of examination. Positive and negative effects of lectures on students' learning appeared related to alignment and misalignment, respectively, between teaching, learning and assessment. Tutor's authoritarianism was pointed out by students who appeared to be strategically shifting approaches according to the type of the exams, and this led to elements of a surface approach. While the majority of the students maintained the same broad approach across different types of examination, there were marked differences in how that approach was enacted, depending on the examination requirements. Students appeared to make broader connections within the deep approach in relation to the open-book examinations (holistic approach) and showed fewer connections and more fragmentation for the closed-book examinations (atomistic approach). The findings are discussed in relation to recent literature.

Key words: Students, Examinations, Understanding, Approaches to studying, Classroom learning experience.

1. Introduction

Early studies which explored students' understanding (see Marton & Säljö, 1976), introduced the distinction between deep and surface approaches to learning. Approaches were found to depend on students' intention: either to seek personal understanding in an active way, or simply to reproduce the content to cope with assessment requirements. The deep approach emphasizes meaning and understanding while the surface approach emphasizes reproduction and rote recall (Marton & Säljö, 1976; Biggs, 1979; Prosser & Millar, 1989). Students were also found to adopt an achieving approach (Biggs, 1979) which Entwistle, Hanley and Hounsell (1979) re-conceptualized as a strategic approach. This strategic approach emphasizes

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organizational skills, effort and awareness of assessment procedures.

Research suggests that students' approach is influenced by a range of factors concerning the academic context (e.g. course design and teaching methods) including assessment and students' perceptions (Biggs, 1987; Prosser & Trigwell, 2001; Prosser et al., 1994; Ramsden, 1992). Perceptions of the examination demands and intentions in studying indicate influences on students' learning, which are also affected by the extent to which "personal" understanding corresponds to "target" understanding. Entwistle & Smith (2002) described target understanding as the understanding that the teacher expects the students to develop, and personal understanding as that which students subsequently construct for themselves. It also includes beliefs and feelings about the educational context based on past experience. All of these components affect how the student reacts to the target set by the tutor (Entwistle, 2000).

Besides, approaches to studying have been related to students' assessment preferences. Students who described themselves as surface learners preferred teaching and assessment procedures which supported this learning approach, whereas students who described themselves as deep learners preferred courses which were intellectually challenging and assessment procedures allowing them to demonstrate their understanding (Entwistle & Tait, 1990; Tait, Entwistle, & McCune, 1998). Recently, Gijbels and Dochy (2006) and Baeten, Dochy and Struyven (2008) have explored students' assessment preferences and approaches to learning after formative assessment and portfolio assessment respectively. Students who preferred assessment tasks that required higher order thinking and permanent evaluation used a deep approach to learning. In both studies, there was less statistical support for the suggestion that students who adopt surface approach prefer assessment procedures that support memorising and reproduction. However, both studies failed to enhance students' deep approach after experiences with the above forms of assessment.

2. The effects of teaching on learning

Entwistle and McCune (2005) have indicated that the effects of teaching go well beyond the influence of the teacher and include other features of the whole teaching-learning environment, particularly assessment procedures (Biggs, 1999; Entwistle, 1998, 2000), while different experiences of teaching or assessment are found to alter the approaches of a class as a whole (Thomas & Bain, 1984; Trigwell, Prosser, & Waterhouse, 1999). Assessment seems to influence how much, how (approach) and what (content) students learn. Answers to exam questions depend on what is required by the question and also how the individual student understands the topic (Entwistle & Entwistle, 1991). Entwistle and Marton (1994), suggested that hard-working students in preparing for essay exams organized and summarized understanding in an idiosyncratic pattern which often had the form of a "knowledge object". "Knowledge objects" appear to be perceived as almost visual entities that can be used as mnemonic tools to structure thinking and to tailor explanations to meet requirements of, for instance, specific exam questions (Entwistle & Entwistle, 1997; Entwistle & Entwistle, 2003).

As one characteristic of good teaching involves encouraging a deep approach to studying, Biggs (1999) suggests the importance of setting up an alignment system to align teaching and assessment methods to the learning activities tutors want students to develop, and the level of understanding they want students to achieve. Teaching aims to enhance students' engagement in higher level learning activities, what Perkins calls "performances of understanding" (Perkins & Blythe, 1993, 1994), which lead to a way of interacting with the world (Vermunt, 1996, 1998).

In line with Biggs, Marton (2007) focuses on the intended capability which he calls the "indirect object of learning", while the whole object of learning concerns the how and what of learning (the capabilities and content) (Marton & Booth, 1997). He argues that how the object of learning is presented and brought to life within the lecture is what makes learning possible, through good teaching. When students discern and focus on

those critical aspects of the object of learning, which are possible to recognize in a particular situation, their lived object of learning (outcome of learning) becomes equivalent to the enacted object of learning (the space of learning) (Marton, 2007). However, whatever takes place in the classroom makes differing sense to different students. Marton reports that this is one of the most solid conclusions that can be drawn from his research on learning that takes place in the classroom (Marton & Tsui, 2004).

The importance of teaching-learning class experiences in students' self-engagement in understanding has recently been raised by Langer (1997) who sees education, even in university level, as encouraging "mindlessness" instead of "mindfulness" and also by Baxter-Magolda (Baxter-Magolda, 2009; Baxter-Magolda & King, 2004) who stresses the need for tutors to show respect for students' current understanding while helping them to understand how new knowledge is developed. This process aims to support students so as to be able to form their own viewpoint, while also respecting that of others' and being prepared to learn from others. All these suggestions can be seen as helping students to develop or support their "disposition to understand for themselves" (Entwistle & McCune, 2009).

3. Open- and closed-book type of assessment

In the last three decades, there have been influential criticisms of the impacts of conventional assessment (e.g. closed-book examinations) (Trigwell, 1987; Sambell, McDowell, & Brown, 1997) on students' learning in higher education. Biggs (1999, 2003) suggested that closed-book essay examinations lead students towards rote learning, question spotting and speed structuring, while open-book examinations demand less memorization and lead students to emphasize coverage. Theophilides and Dionysiou (1996) focused on students' perceptions of open-book examinations and also perceptions, in order to find out the study behaviour described by students prior to, and during, an exam in open-book and closed-book forms (Theophilides & Koutselini, 2000). Their findings suggest that the open-book exams reduce the rote memorisation of facts and, therefore, encourage students to study in more constructive ways (Baillie & Walker, 1998; Theophilides & Dionysiou, 1996). A comparative study carried out by Theophilides and Koutselini (2000) indicated higher scores in any of the following factors in preparation for the open- rather than closed-book examinations: (a) mastering the course content (b) involvement in the learning process (c) using the knowledge gained in a creative way and (d) facing the exam with optimism.

The positive impact of the open-book examination on learning has been supported by innovative research projects in higher education (McDowell, 1995; Eilertsen & Valdermo, 2000). McDowell reports that in the preparation for open-book examinations, systems methodology students were clearly attempting to structure and synthesize their knowledge (integration vs memorization) (Sambell, McDowell, & Brown, 1997). Students also appeared more motivated and aware of the level of their learning in relation to the examination demands. When preparing for closed-book examinations, however, students reported the importance of memorization of factual information (Sambell, McDowell, & Brown, 1997; Sambell & McDowell, 1998). Also, Eilertsen and Valdermo (2000) found that, as a consequence of open-book examinations, many students reported being more focused on understanding the topic throughout the lessons. Students also realized that the extensive practice of "crash studying" or cramming when preparing for open-book tests is not as successful as for ordinary tests.

Although there is research interest in the effect of examination methods on learning, no studies have yet focused on students' overall experiences of revising and developing understanding for different types of examinations. The present study investigates students' experiences of preparing for both open- and closed-book examinations. Student's cognitive activities and revision strategies depict particular class experiences. These all indicate how students learn to cope with the exam demands which influence the quality of learning.

4. The present study

The study focused on students' preparation for open- and closed-book essay-type semester examinations. In most social science departments in Greece, open-book essay examinations appear as an alternative to closed-book, long or short essay forms.

In the case of the open-book examinations the questions set usually present or just describe an issue from a particular point of view and ask students to express their opinion, taking into account the relevant literature. Students are expected to take a critical stance on the theories and have to refer to appropriate theories and evidence to justify their answer. Closed-book examination questions usually ask students to present factual information and describe and explain information (Pesmazoglu, 1994). Higher level engagement with knowledge, like relating, applying, theorizing (Biggs, 1999), is only sometimes asked to be presented. For example, in the case of the closed- and open-book examinations, students may be asked respectively: "Present in brief Rogers' theory of the self and give an example of the Q test" "Explain and interpret possible forms of behaviour and feelings about the self when a pupil faces many failure situations at school. Discuss relevant theories". The present study explores the activities employed for the development of understanding for different forms of exams involving somewhat different styles of question. The style of question and students' access or not to the exam material represent different aspects of the exam demands which are unavoidably interwoven. For the open-book exams, students' access to the material during the examination removes the need for any question demanding factual information.

The present study was carried out in a Greek Social Science Department where students were familiar with both the open- and closed-book essay type examinations. Open-book essay-type examinations were taken in almost half of the subjects. In this department, this type of examination has been employed by many of the tutors for more than two decades[2], aiming to constrain the parroting of rote-learned information. The time for revision does not vary according to the subject or the type of examinations.

Aims

The study aimed to explore differences in cognitive activities and strategies used in preparation for open- and closed-book essay-type examinations. It also focused on how students developed understanding in preparation for the above types of examinations. The study was also designed to reveal any possible contribution of class learning activities in the revision process. The study does not explore the effect of students' access to the material or the style of questions for each type of the exams as separate dimensions. These two aspects appear to be interwoven and previous studies have revealed memorization vs integration of knowledge for the closed and open-book form of exams, respectively (Eilertsen & Valdermo, 2000).

5. Method

Participants

Twenty Greek psychology students participated in the study. They were volunteers who were graduating at the end of the academic year or a semester later. By this stage of their degree, they were expected to be aware of the exam requirements and the cognitive activities they employed, and also to be reflective about studying activities and revision strategies for both types of exams.

Data collection

The interviews were semi-structured and individual. They were conducted a few weeks before the semester examinations and were

2. In Greece, the exam questions are set and the exam papers are marked by the tutor who is teaching the particular subject (class).

recorded. The interviews lasted almost an hour. The interview schedule included two sections concerning preparation for open- and closed-book essay-type examination. Both of the two sections were focused on the same issues. Students were asked to reflect on their experiences of revising for exams and describe and explain as far as they could:

(a) Their intention in studying;
(b) Their revision activities for open- and closed-book essay-type examinations;
(c) How understanding was developed in preparation for open- and closed- book examinations.

Interviews followed the phenomenographic interview technique (Marton & Booth, 1997). This has the form of interpersonal contact in which the interview resembles a social discourse in structure. The conversational style of interviewing is used to promote free exploration of issues which demand reflection and also facilitate ways of construing the thoughts and experiences reported by the students. In this study, the technique allowed 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. Only a few students gave a substantial amount of information and an extensive account of their cognitive activities and learning experiences, even though the interactive form of interviewing enabled students to explore for themselves previously unfocused learning experiences. But this is normal in interviews of this kind which are focused only on students' experiences of studying, rather than their conceptions of a target concept, as normally occurs in phenomenographic analysis.

Data analysis

The interviews were transcribed in full and then analysed. The analysis looked specifically at students' studying processes to consider the strategies used to get ready for the exams, memorize and recall the material, and also the cognitive activities involved in developing understanding. The focus was on students' reflections on revising for the open- and closed-book essay-type examinations. Reflections concerned experiences and studying activities. What emerged from the analysis were qualitative "categories of description" (Marton, 1981).

In the analysis of the interviews, in order 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 description was constantly tested and refined to take account of the relevant data. The analysis followed the following steps which were close to the process suggested by Cooper and McIntyre (1993) and Miles and Huberman (1994). Reading a random sample of transcripts, identifying points of similarity and differences among these transcripts in relation to the aims of the study, generating "theories" (broader functional categories) describing emergent "answers" to the aims, testing theories against a new set of transcripts, testing new theories against transcripts already dealt with, carrying all existing theories forward to new transcripts, and repeating above processes until all data have been examined and all the theories tested against all data.

The codes derived were used as organising devices that allowed the researcher to find and then collect together all instances of a particular kind. The codes were successively elaborated until they took the form of themes (categories). Accuracy of the meaning which supported the validity of the descriptive categories was established during or after the completion of the interviews (Francis, 1993; Marton, 1994).

The descriptive categories that emerged from the analysis of the interviews are presented below. The form of the interviews and the researchers' interest in the students' overall experience of preparation for the open- and closed-book examinations did not allow us to get answers from the whole sample for every category described below. For example, in the category "the classroom learning experience as a threshold to learning", students were not asked about the particular ways in which the classroom learning experience contributed to understanding. The

findings presented emerged only from some of the students.

6. Findings

Intention and aim of studying

When studying for the closed-book essay-type examinations, most students' intention was memorization followed or not by personal understanding. Students were concerned about being able to present appropriately any single part of the exam material rather than about gaining and presenting personal holistic understanding of the issue in hand. For most of the students, focus on particular sections was not necessarily followed by links to the overall meaning, although some students mentioned reading of whole sections before focused studying. This indicates an element of an atomistic perspective, even for students who appeared deep oriented.

> S2 Closed-book examination (CB) "I start revision by reading through a whole section at one go. I do this to get an overall idea of the content of the material. I divide the text into paragraphs and I then get into intensive memorization of any particular paragraph...to be able to present it in an exam question".

Personally meaningful parts and sections of the material, seem to be treated as independent entities rather than as parts of an integrated whole, by students who reported a surface approach and those who appeared to shift to a surface approach in preparation for the closed-book exams (see Table 1).

> S14 (CB) "I get through a quick read of the material. I underline the most significant points and I then get into the memorization process. Having some idea of what's going on I use rote-learning for any single part of the material, especially definitions, terms etc, even small paragraphs or sections which include important information or interpretations. Parroting makes me feel sure about my readiness for the exams".

Most of the students (S2, S3, S4, S5, S7, S10, S12, S15), who reported a deep approach in preparation for the closed-book examinations, mentioned links between paragraphs or sections. They also presented themselves as being concerned about memorization (Prosser & Trigwell, 2001).

> S7 (CB) "I try to get the message of each paragraph. I keep this in mind when I'm reading through the next paragraph. In the course of revision, I check my readiness to identify connections between the paragraphs. Exam answers usually demand rote-learning and most students use parroting. I think, though, that besides memorization which is a significant part of the revision process, I have to see the issues behind the lines. This will reveal relations to other subjects...".

For the open-book examinations, the intention reported by almost all of the students was the development of an overall deep holistic understanding (except one student who reported a surface approach). Initial overall understanding was successively enriched by focused understanding and relevant evidence. Interrelations among evidence were also apparent. Students' engagement in deep understanding was depicted in their major concern to (a) grasp the overall meaning as a form of background understanding and (b) establish understanding in relation to tutor's understanding or that depicted in the perspectives presented in the material, for those who focused on class-learning and on the material, respectively (see Table 1).

> S2 Open-book examination (OB) "I usually read the material at one go... It is important for me to make sense of the material as a whole. At first, I go for the understanding of whole sections. Secondly, I go for a detailed-focused understanding. In the course of studying of each paragraph I keep in mind the understanding of the whole section I initially reached....I want to know what point the tutor or the author

Table 1
Students' approaches to studying: deep, surface and strategically shifting approaches in preparation for the open and the closed-book examinations.

	DEEP (N=13)		SURFACE (N=1)	STRATEGICALLY SHIFTING APPROACHES (N=6)	
	Deep/Relating understandings	Deep/focused on the material	Surface		
Open-book exams	9/20	4/20	1/20	Deep 5/20	Surface 1/20
Closed-book exams	2/20	11/20	1/20	Surface 5/20	Deep 1/20

wants to make, what she eventually believes about a particular issue. In the exams I have to take into account and discuss the other's perspectives besides and in relation to mine ...".

The classroom learning experience as a threshold to learning

Most students adopted a deep approach in preparation for whatever type of the exams they were taking (Table 1). Seventy percent (14/20) of the overall sample appeared consistent in approach, irrespective of the type of the examination. Only six students reported themselves strategically shifting approaches according to the type of the examination, gearing their work to the preferences of the lecturer (perceived tutor's demands).

Most of the deep oriented students mentioned the contribution of class learning to their understanding in terms of matching their own understandings and ideas with those of the tutor, in revising for the open-book, rather than the closed-book, examinations. Only two of them reported the contribution of the lectures in understanding when they revised for the closed-book exams. However, some deep-oriented students reported deep understanding in the revision of the examination material without any reference to the class experience. They appeared personally interested in the material and reported relating and applying information, making links to everyday life experiences. They were concerned about demonstrating their understanding in their exam answers. Irrespective of students' focus on the class-experience or on the exam material for the development of understanding, all of the students who reported a deep approach in preparation for the open-book examination reported the same approach in preparation for the closed-book exams.

S2 (OB & CB) "In exam answers (closed-book exams) I present both the main arguments and the relevant evidence which appear in the material supported by hints of my personal view that make clear to the tutor that I have reached real understanding... I learn for myself to remember information in the long-term, creating my own axes of understanding an issue ... to be able to think and reflect on what happens in the world, what happens to me... I don't challenge everything, though, but only if necessary. Challenging and thinking critically is something I usually get into when I revise for the open-book exams where studying is focused on understanding of what points authors make and how you understand it".

For the open-book examinations, almost all of those 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 employing tutor's perspective for which they lacked confidence. For the revision of the closed-book examinations, they did not appear to value lecture information or they reported surface elements in the use of it. Lecture experiences were used as a guide to focused studying and memorisation or as a means to meet the exam demands.

> S17 (OB) "Attending lectures is a precondition to meet exam demands... you must grasp the tutors' perspective. What she thinks the gist is... You revise other students' class-notes plus yours plus the exam material. Such a way of studying may make you pleased. You may feel like having understood a lot, you're there. You can't, though, be sure about the exam outcome. You still cannot be sure for your answer, the question may get you to paths that the tutor does not approve. It's the tutor's viewpoint that always matters, what she perceives as a good answer".

> S17 (CB) "Revision of classroom notes and attending lectures consist only a small percentage of the whole preparation for the closed-book exams. The priority is the revision of the exam material... to succeed in the exams... Studying the material systematically and intensively... practicing memorization and rehearsal of any bit of information".

Only one student who strategically shifted approach according to the type of the examination, appeared to move in the other direction. She reported elements of the surface approach for the open-book examination and elements of a deep approach for the closed-book examination.

In preparation for the open-book examinations, students reported that their studying was guided by particular classroom learning experiences which led to an overall understanding of an issue. The classroom learning experience concerned information and experiences which students discerned as providing a "threshold for understanding". This was not always the case in preparation for the closed-book exams. The class experience they reported consisted of both cognitive and emotional components. Understanding was followed by positive feelings about themselves with regard to the examinations. This class experience supported learning in terms of:

(a) comparing/relating the understanding developed in the class with the content of the material to be revised,
(b) providing a way of thinking and an "interpreting" tool,
(c) lending a primary structure to their understanding,
(d) creating feelings of confidence concerning the development of understanding and readiness for the examinations.

These four aspects will now be described in turn.

(a) *Comparing/relating the understanding developed in the class with the content of the material to be revised.* Most of the students reported that information, ideas and understanding developed in the class, and the information included in the classroom notes, were related to the recreation of classroom learning experiences. Significant information was pointed out and understood in relation to what was presented in the lectures. The understanding developed in class was compared/related to the content of the material, in terms of the meaningful relations and variation of information they came across in the revision process. This process boosted and enriched understanding in ways that then met the target understanding expected by the tutor. The tutor's influence seems to underlie a process whereby meaning, for students, is created through particular experiences and discussions led by tutors.

> S11 (OB) "I recall what the tutor presented in the class and I try to relate that understanding to the particular piece of

information I'm studying, I compare meanings. I think a lot on that understanding, the classroom discussions and how the tutor seems to conceive an issue. In this process my classroom notes help a lot because they bring up more classroom information to relate and compare to the issue in hand. In the exams I'm thinking a lot on how an answer would be developed on the basis of the lectures- ...on the basis of the debates I have experienced throughout lectures- the experiences and situations reported in the class that gave meaning to the main ideas and concepts that dominate a field... I don't mean systematic but rather discursive contexts... it is the sense you get... you know paths... you may try any ... and get you there...".

These, not systematic logical steps but rather experiences of reaching meaning of a particular issue, lend meaning to main ideas and concepts and seem to depict how tutors conceive the concepts. The "how" and "what" of learning seem to be related, although the level of understanding is not described.

Only, two students (S11, S20) reported the importance of relating the classroom learning experience with the content of the examination material in their revision, irrespective of the type of the exams.

S11 (CB) "I revise the material but I also focus on the ideas included in the classroom notes and think on them simultaneously... I underline the concepts which are in the heart of a section. I also underline the most significant information included in my classroom notes and I memorize both, if different. I bring to my mind what the tutor emphasized ... I recall what the tutor mentioned in the class and I take this into account in the revision of the material".

Concerning the closed-book examinations, students who employed a surface approach among those who appeared strategically shifting approaches according to the type of exams, mentioned that they used the comparison of the content of the lectures with the exam material to direct their studying to particular parts of the material, so reducing the amount of the material that had to be learned.

S1 (CB) "I read through the whole exam material, but I put less effort on memorization of issues which were not presented in the lectures and on which the tutor did not focus. I perceive these as less significant. At the last stage of revision, memorization, I do not focus on them. I focus only on what I perceive, according to the lectures, as necessary to be stored in memory in order to answer exam questions".

The above mentioned activities indicated a search for economy in time and effort, which consisted elements of a surface-strategic approach to studying and revealed a different use of the "focused" information in the revision process, according to the type of the examinations (which is possibly related to the different styles of question).

(b) *Providing a way of thinking and an "interpreting" tool*. Within this category, understanding was described as being developed in the context of a classroom learning experience and seemed to extend its effect beyond the particular information. Unfamiliar information that students came across in the revision process was approached through the lens of the overall understanding developed in class, which was based on the focused concepts and ideas. The overall lecture-based-understanding seemed to consist of a functional/interpreting theoretical tool for the development of independent learning of information not presented in the class.

S11 (OB) "I mark any new and different points from what the tutor presented in the class. I think about them through the understanding I've developed in the class, which I keep in mind during the revision... I approach new information on the basis of what I have already understood. ... It's this broader sense of understanding

developed through the lectures which allows me to try to understand. It's something to start with and gets me closer to real understanding".

The effect of the classroom learning experience on learning unfamiliar information was also reported in preparation for the closed-book examinations. Almost all of the students reported the difficulty they faced with regard to developing understanding and memorizing those parts of the material which were not presented in the lectures.

S4 (CB) "The exam material includes information which has not necessarily been discussed in the class... It is likely for me to have quite many unclear points to struggle with. It's difficult to understand them if you have never heard anything about before- teaching helps a lot... I'm bound to use rote learning for information I perceive as inconceivable".

The lack of the enacting dimension of teaching appeared related to a lack of confidence among students in "getting to grips" with difficult information which made them shift to rote learning or parroting ideas from the teacher.

(c) *Lending a primary structure to their understanding*. The class experience was reported as supporting the development of personal understanding by giving a sensible order and a sense of control of the information. The structure of the lectures provided indications of the rationale that governed a particular issue and the sequence of presentations contributed to understanding by providing structure to the overall material. This structure was treated as a functional rather than a monolithic entity that mediates personal understanding, indicating a holistic perspective.

S5 (OB) "...I start reading the classroom notes one after the other as a whole following the dates of the lectures. The sequence of the lectures hides or depicts a rationale that is useful to be identified and there is also a sensible date order that is supposed to provide links between different issues presented in each lecture. I get back to this rationale when I get confused. It helps to organize my own understanding".

For the closed-book examinations, the structure of the lectures was not reported by any of the students to contribute to the preparation for the examinations.

(d) *Creating feelings of confidence concerning the development of understanding and readiness for the examinations.* Students reported that reflecting on the classroom learning experience boosted understanding in terms of raising positive feelings about the self and the examination situation. Once a degree of understanding had been established with regard to the issues which were in the heart of the lecture, it enhanced students' confidence and optimism to struggle with the exam material and to succeed in the examinations. Students felt they were able to learn efficiently and understand in depth. Where the content of the examination material was related to the classroom learning experience, students got a sense of competence, and control over the material.

S5 (OB) "I start with classroom-notes. Having in my mind what was presented in the lecture, gives me a first idea of what's worth noticing. I feel like having the material under control. I feel as being already there. I've already gained understanding of the subject and I boost it further by reading the material. I recall particular instances, who said what in the class, what were her ideas about how particular situations could be seen through the lens of a particular theory. This made me feel good and capable. Once a particular classroom experience is brought up to my mind, I feel secure about my understanding. Sometimes a kind of long fermentation takes place. I eventually come up with a structure of complicated parts of information which puts things in order in my mind..."

Recollection of class-learning experiences

Table 2
Students' preferences for open and closed-book examinations.

Preference for the open-book exams	Preference for the closed-book exams
S2(D/D)[3], S3(D/D), S4(Dt/D), S5(Dt/D), S7(D/D), S9(Dt/D), S10(Dt/D), S11(Dt/D), S12(D/D), S13(Dt/D), S16(Dt/D), S19(Dt/D), S20(Dt/D)	S1(Dt/S), S6(S/S), S8(Dt/S), S14(Dt/S), S15(S/D), S17(Dt/S), S18(Dt/S)

followed by positive feelings concerning the self, seemed to allow students to develop higher level learning activities like comparing, relating, applying and theorising which in turn seemed to support the structure of the material and lead to the development of a knowledge object.

Preferences for particular types of examinations

Students discussed difficulties and favorable aspects of the examination demands, in relation to the class learning and their confidence concerning the examination. Most of the students prefer the open-book type of the examinations (Table 2). These are students who reported a deep approach for both the open- and the closed-book type of examinations. Preference for the closed-book examinations was reported by students who appeared surface and strategically shifting approaches according to the type of the exams.

Most of the deep-oriented students who reported a preference for open-book exams mentioned the importance of the class learning in understanding, depicting alignment between teaching, learning and exam demands. They mentioned that it was easy for them to work on issues for which they had, early on, reached a level of personal understanding in terms of what was discussed, presented and conceptualized in the class. This understanding was then validated by the class experience, guided by the tutor's understanding. Her understanding exemplified the academic discourse in the field. The experiences of understanding, led by the tutor, appeared to elicit activities that give structure, as well as elaborating and deepening understanding, all of which were perceived as necessary for the development of an appropriate answer. Students also mentioned positive feelings in preparation for the examination and the examination situation, and presented themselves engaged in a "game" of understanding in which students were asked to "use" their understanding to bring information and others' views together or challenge them. This kind of early understanding taking place in class makes them feel confident in the revision process, and confidence increases the likelihood of success in the exams.

> S4 (OB) "If you attend the lectures you win the game in advance, you feel confident. In the case of the open-book exams, you rarely face questions you cannot answer... I mean if you attend the lectures and you get the gist... questions usually concern issues developed in the class... so you draw from the lectures... You know how to think on them and build up an answer. I enjoy it. Of particular importance for a

3. In the codes in parentheses, the first letter stands for the approach employed in preparation for the open-book and the second for the approach employed for the closed-book examination. Thus, D/D: stands for the deep approach for the open- and closed-book exams (Dt refers to the deep approach with reference to teaching-lecture while D refers to the deep approach in studying the exam material without reference to the teaching). D/S: stands for the deep approach for the open-book and the surface for the closed-book exams. (The reverse is for the S/D). S/S: stands for the surface approach for the open- and closed-book exams.

> good answer are those key thinking routes which the tutor usually follows and are based on particular ideas. These lead to an understanding behind the lines that reveals what actually is the case- what the discourse is about. This is something we all share through discussions...".

Some of those who preferred the open-book examinations (S4, S10, S13, S15) and reported a deep approach in the lectures mentioned that they were not stressed when they took this type of the exam, suggesting the effect of this type of the examination on understanding. Lack of pressure for intensive memorization seemed to give them the opportunity to focus on knowledge that met their personal interests. They also reported enjoying studying. Having access to the material during the examination seemed to provide one more opportunity for understanding supported by class-learning.

> S4 (OB) "It's like reading a novel, I read it in a happy mood that allows me to keep the 'key' information in my mind. I'm not concerned about memorization but I try to see what's going on there. I enjoy reading especially when I'm interested in this particular class. In the exams if answers involve difficult information I read the material once more and I once again try understanding. What I heard in the class and the material helps to build up an answer".

Preference reported by deep-oriented students, who developed understanding on the basis of the exam material, for the open-book examination indicated alignment between teaching, learning and exam demands. They reported a broader perception of tutors' contribution and concern about students developing independent learning, critical thinking, relating, and elaborating ideas. This perception then seemed to be "transformed" into an appropriate way of studying. The students perceived exam demands to be in line with these aims, asking them to present personal understanding and approach an issue in a way that depended on independent learning.

> S7 (OB) "The aim of H.E.... is to make us develop critical thinking. This is what tutors want us to make of our studies... to be able to synthesize and analyze information in a way that gets things into a whole. Tutors want us to create and present our personal view of an issue... I'm studying the material to get the gist of any issue in hand, like being able to express the whole meaning in one sentence... For me, understanding is about one's ability to see how theory is interwoven with reality".

Students who preferred the closed-book examinations reported either a surface approach or strategically shifting approaches according to the type of the exams. They felt secure with this type of examination demand because it was clear and easily achieved, as it involved factual information. Students avoided involvement in the process of relating understandings about which they were not confident. Students who shifted approach reported concern about the open-book examinations (S1, S8, S14, S17, S18), with a particular concern being the tutor's perceived authoritarianism. Students perceived tutor's demands as almost unpredictable and unclear so that they cannot be met. Questions appeared as a "threat", demanding an answer based on interrelations between tutor and students' understanding of an issue presented in the exam material. Students reported that answers were expected to be synthesized in relation to tutor's perspectives discussed in the lectures, although students were not clear about those perspectives. This reduced their confidence about their understanding of the examination questions and the appropriateness of their answer.

> S8 (OB & CB) "I prefer the closed-book examination. Questions are straightforward and precise. It's clear to us what we are asked to present, answers appear at particular pages of the exam-material. The outcome is predictable. For the open-book exams I'm unclear whether I'm actually answering the question. This makes me stressed. I can't be sure whether the path

I follow and the information I use to get to the answer is that she perceives as appropriate. I mean whether I'm close to her perspective. It's like she sees things I cannot see in a particular area. It's always her own perspective...".

There appeared to have been a misalignment between teaching, learning and examination demands in which contact between the tutor's and the student's understanding seemed to have failed, although it was expected to be demonstrated in the examinations. Students were thus reporting a sense of being alienated in the learning experience; exam demands, teaching and understanding appeared to be fragmented, with the tutor's understanding being treated as an alien understanding, unrelated to their own.

The effect of misalignment between teaching and the exam demands on learning was also reported by a student who mainly presented elements of the surface approach for the open-book exams and elements of a deep approach for the closed-book exams.

15 (OB) "I know that universities aim to make us get into critical thinking, but I can't see that around. It's not like secondary school and I myself use to get involved in depth with knowledge but I don't bother to present it in the exam. However, I met tutors who didn't give us the opportunity to express our own view in the exams. I twice got only a pass mark in open-book exams, although I had worked hard to present strong arguments to support my own perspective. I don't believe that open-book exams promote critical thinking, tutors value only their own perspectives... I now almost reproduce the "expected ideas", I don't try to present my own understanding in the exams. I prefer the closed-book exams. The factual information gives me a good mark and aspects of my personal understanding usually give me a higher mark".

Studying to develop personal understanding for the open-book examinations, was interrupted by examination experiences. Examination questions did not really assess the objectives set throughout the lectures and met by students. They appeared to demand almost reproduction of tutor's understanding, "restraining performances of understanding" (Perkins & Blyth, 1993).

7. Discussion

The influence of teaching on feelings and approaches

The study reveals the role of class learning in understanding as a both cognitive and emotional experience, particularly in preparation for the open-book examinations. The understanding students developed in class appeared to bring the required target understanding close to the students' personal understanding; target understanding appeared quite transparently to encourage students' independent thinking. A "flow" of meaning was initiated by the tutor in the context of teaching, linking theory with experiences and real life situations. How tutors conceived an issue was made explicit through their academic discourse. In this context, students appeared to develop independent thinking. Such teaching-learning experiences also seemed to function as a "threshold" to learning in terms of "core" understanding developed in relevant discursive contexts (Northedge & McArthur, 2009). Such teaching enabled students to think more widely and to understand both relevant and less or indirectly relevant material to that presented in the lectures.

The threshold understanding developed in the classroom seems to function as an "interpreting tool", which supports students' active effort to understand course material. It created positive feelings about the self, self-competence, and self-confidence about understanding and about the exam outcome (Theophilides & Koutselini, 2000), which encouraged students to struggle with the material, making learning a "playful" situation.

From this perspective, the classroom learning experience seems to provide students with a "scaffolding" to higher level learning activities like

comparing different aspects and understandings, applying and elaborating. This is what students are asked to present in the exams and is the "how" of learning - the indirect object of learning (Marton & Säljö, 1997; Marton, 2007). This appears to be the core element of the classroom learning experience, indicating alignment among the teaching, learning and examination demands (Biggs 1999). The lived object of learning is then likely to become equivalent to the enacted object of learning (Marton, 2007), and the tutor's target understanding is likely to be brought together with the students' personal understanding (Smith, 1998; Entwistle & Smith, 2002), providing not only a cognitive but also an emotional experience. Such experiences appear as a first stage in the creation of a knowledge object (Entwistle & Marton, 1994; Entwistle & Entwistle, 2003), indicating a deep level of conceptual understanding-integration of knowledge (McDowell, 1995; Theophilides & Dionysiou, 1996). They appear to lead thinking paths that enable students to present an appropriate answer.

Besides the positive influence of the class experience on learning, the study indicates that teaching may mediate learning in a negative way in terms of misalignment between teaching, learning and assessment (Biggs, 1999, 2003). Students who appeared strategically shifting approaches according to the type of the exams, reported dislike of open-book examinations, due to the perceived authoritarianism of tutors. Lack of confidence was felt about the appropriateness of their answers, the exam outcome and the contact between their understanding and that of the tutor's, which they perceived as necessary in their answers. This seemed to lead to an unsuccessful deep approach, as elements of a surface-strategic approach were also apparent. This negative effect of misalignment was reported by one student to be eliminated when students had experienced a broader academic culture promoting deep and personal understanding. She reported a surface approach for the open-book examinations, perceiving tutors to expect "regurgitation" of their understanding presented in the lectures, but engaged critically with research findings and understanding for herself (detached from authority, Entwistle & McCune, 2009), when preparing for the closed-book examinations.

Students' perceptions of tutors' authoritarianism, expecting exam answers to reflect the tutors' own viewpoints, appeared to be the core element in misalignment, indicating an assessment-criterion that does not show respect for students' current understandings. It was followed by an "alienated" learning experience where teaching, understanding and exam demands appeared fragmented-not holistically experienced; tutor's understanding was perceived as an alien understanding.

The conclusions of this study seem to support those of both Laurillard (1998) and Baxter-Magolda (Baxter-Magolda, 2009; Baxter-Magolda & King, 2004). Laurillard's (1998) was concerned about whether universities were promoting critical thinking, pointing out that "no matter how democratic we are about respecting the student's point of view, there is always a predefined standard of answer" (Laurillard, 1998, p. 2). Baxter-Magolda argued that tutors should respect students' current understandings in order to help them develop their own viewpoints, while also preparing them to learn from others and show respect for their viewpoints.

Type of assessment and approaches to studying

The study indicates, unlike what has previously been suggested, that the form of assessment does not affect students' learning much. Most of the students were consistent in approaches, irrespective of the type of the exams (although the type of the exam "corresponded" to quite different styles of question that varied to the extent they promoted deep learning). Only six students appeared to be strategically shifting approaches according to the type of the exams, indicating an inconsistent effect of the type of the exams on learning. In contrast, previous studies had suggested in a quite "clear" way that open-book examinations were more likely to promote deep learning than the closed-book exams (Sambell, McDowell, & Brown, 1997).

Nevertheless, the form of examinations was related to a few specific learning activities. The

open-book examinations appeared to support deep holistic understanding and reduced concern about memorisation (Biggs, 2003; McDowell, 1995). This was the case for almost all of the students, even for those who appeared to be strategically shifting approaches according to the type of the exams. Holistic understanding was illustrated in the aims of studying for an overall background understanding of the material and relations between different views and perspectives; also in the development of a "threshold" to learning and in the use of the rationale underlying tutor's lectures.

The closed-book examination seems to support an atomistic perspective and emphasizes memorisation (Biggs, 1999, 2003) sometimes leading to mimicking the tutor's understanding. Almost no students reported holistic understanding linking meanings of parts to the overall meaning. However, this less constructive aspect of learning (Eilertsen & Valdermo, 2000) may be eliminated by students' engagement in active learning processes of relating evidence and identifying links between information. Elements of a surface approach were related to an experience of teaching being misaligned to exam requirements (see above), indicating the mediating role of teaching and assessment in employing more "secure" ways of learning. Knowledge was treated as a series of unconnected parts of information followed by limited or lack of understanding (Entwistle & McCune, 2005). The focus was on memorisation of information, following the structure of the material provided, while lecture information was used for economy in time and effort and the lecturer's background understanding was perceived as a means to support memorization and facilitate recall.

Attitudes to different forms of examinations

The study indicates links between approaches and preferences for particular forms of examinations. In line with previous studies, all of the students who preferred the open-book examination (requiring higher-order thinking) reported a deep-approach (Tait, Entwistle, & McCune, 1998; Gijbels & Dochy, 2006; Baeten, Dochy, & Struyven 2008). Preference was related to their perception of this form of assessment as one promoting independent learning and critical thinking with which they felt confident. Confidence concerns either the class experience or engagement in understanding for themselves was depicted in their need to demonstrate indications or aspects of understanding in the exam answers (Entwistle & McCune, 2009). Moreover, preference for the open-book examination was related by some students to a lower level of stress in preparation created by memorisation and this seemed to allow personal engagement in learning and focus on information of their own interest (Baillie & Walker, 1998; Theophilides & Dionysiou, 1996). This indicates the effect of the form of assessment on learning.

Concerning the closed-book examinations, the findings shed light on previous studies indicating limited support for the suggestion that students who adopt surface approach prefer assessment procedures that support memorizing and reproduction (Gijbels & Dochy, 2006; Baeten, Dochy, & Struyven 2008). Students who preferred the closed-book examinations reported a surface approach or strategically shifting approaches according to the type of the exams. They reported confidence concerning both the examination demands and the examination outcome. Examination questions were perceived as clear and straightforward demanding no more than factual responses (Thomas & Bain, 1984; Sambell, McDowell, & Brown 1997; Sambell & McDowell, 1998; Eilertsen & Valdermo, 2000) or thinking outside the box (Entwistle & McCune, 2009), leading to a predictable exam outcome. This appears to be related to the style of the question and seems to depict what Langer (1997) calls "mindlessness" being encouraged in higher education and mediated by a dissonant classroom learning experience.

The study provides indications of the mediating role of teaching and class learning as both a cognitive and an emotional experience in (a) students' understanding and (b) the effect of the form of assessment on learning. The conclusions from the study remain tentative due to the small opportunity sample. However, they do suggest a focus for future research in exploring the effects of aspects of the classroom experience and tutor's perceptions and

conceptualizations of teaching and learning that seem to affect students' cognitive and emotional experience of learning. Such research would then shed light from a different angle onto aspects of misalignment and students' understanding.

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Επιδράσεις των μαθησιακών εμπειριών στο αμφιθέατρο και της μορφής αξιολόγησης στη μάθηση

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Περίληψη

Η μελέτη εξετάζει την επίδραση της εμπειρίας μάθησης στο πλαίσιο της αίθουσας διδασκαλίας και της μορφής εξετάσεων στην κατανόηση των φοιτητών. Διεξήχθησαν συνεντεύξεις με είκοσι προπτυχιακούς φοιτητές ψυχολογίας. Οι φοιτητές ερωτήθηκαν σχετικά με τις στρατηγικές μελέτης που υιοθετούν, προκειμένου να αναπτύξουν προσωπική κατανόηση της ύλης κατά τη διάρκεια της προετοιμασία τους για εξετάσεις με ανοιχτά και κλειστά βιβλία. Επίσης, ερωτήθηκαν σχετικά με τις εμπειρίες μάθησης-διδασκαλίας. Τα ευρήματα της έρευνας καταδεικνύουν την επίδραση που έχει η εμπειρία μάθησης στην αίθουσα διδασκαλίας, ως γνωστική και συναισθηματική εμπειρία, στις προσεγγίσεις που υιοθετούν οι φοιτητές στη μελέτη τους, καθώς και στη στάση τους όσον αφορά τις διαφορετικές μορφές εξετάσεων. Οι θετικές και αρνητικές επιδράσεις των διαλέξεων στη μάθηση των φοιτητών βρέθηκε ότι σχετίζονται με τη συστοίχιση και μη συστοίχιση, αντίστοιχα, μεταξύ διδασκαλίας, μάθησης και αξιολόγησης. Ο αυταρχισμός του διδάσκοντος επισημάνθηκε από φοιτητές που ανέφεραν αλλαγή, με στρατηγικό τρόπο, στις προσεγγίσεις μελέτης ανάλογα με τη μορφή των εξετάσεων −καταλήγοντας στην υιοθέτηση στοιχείων της επιφανειακής προσέγγισης. Ενώ η πλειονότητα των φοιτητών διατήρησε την ίδια ευρύτερη προσέγγιση μελέτης κατά την προετοιμασία τους για διαφορετικές μορφές εξετάσεων, εντούτοις υπήρξαν σημαντικές διαφορές στον τρόπο με τον οποίο οι προσεγγίσεις αυτές υιοθετούνταν στην πράξη, ανάλογα με τις απαιτήσεις των εξετάσεων. Βρέθηκε ότι οι φοιτητές έκαναν ευρύτερες συνδέσεις στο πλαίσιο της προσέγγισης σε βάθος στην περίπτωση των εξετάσεων με ανοιχτά βιβλία (ολιστική προσέγγιση) και κατέδειξαν λιγότερες νοηματικές συνδέσεις και μεγαλύτερη αποσπασματικότητα στην περίπτωση των εξετάσεων με κλειστά βιβλία (ατομιστική προσέγγιση). Τα αποτελέσματα συζητούνται στο πλαίσιο της σύγχρονης βιβλιογραφίας.

Λέξεις-κλειδιά: Εξετάσεις, Κατανόηση, Προσεγγίσεις μελέτης, Φοιτητές, Εμπειρίες μάθησης στην αίθουσα διδασκαλίας.

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