

Running Head: **Students' Experiences of Tutorials**

Title: **Variation in Students' Experiences of the 'Oxford
Tutorial'**

Author: Paul Ashwin

Affiliation: University of Oxford

Correspondence Address: Institute for the Advancement of University Learning
University of Oxford
Littlegate House
St Ebbe's Street
Oxford OX1 1PT

Telephone: +44 (0)1865 286811

Fax +44 (0)1865 286801

E-mail: paul.ashwin@learning.ox.ac.uk

Abstract

This paper examines students' conceptions of the role of the 'Oxford Tutorial' in their learning. An analysis of interviews with 28 students constituted four qualitatively different conceptions of the 'Oxford Tutorial'. These ranged from the tutorial involving the tutor explaining to the student what the student did not know, to the tutorial involving the tutor and the student in exchanging different points of view and both coming to a new understanding of the topic under discussion. These different conceptions also appeared to be related to variations in students' views of the role of the work done in preparation for the tutorial, their view of the student's and tutor's roles in the tutorial, and the conception of knowledge that students adopted in relation to the tutorial. The implications of this study are discussed in terms of the relations between students' conceptions of tutorials and their anticipated learning outcomes and its implications for contexts outside of Oxford in terms of students' conceptions of academic tasks.

Key Words

Tutorials

Students

Phenomenography

Conceptions of learning

Approaches to Studying

Variation in Students' Experiences of the 'Oxford Tutorial'¹

Introduction

The tutorial systems at the universities of Oxford and Cambridge can be argued to have had a huge impact on the way in which teaching and learning is thought about in British universities and beyond. For example, Rose and Ziman (1964) argued that:

Oxford and Cambridge are the most famous universities in the English-speaking world. In particular they are the most famous *teaching* universities. They are supposed to possess some special and unique method for getting intellects to sparkle, for filling heads with knowledge, for making undergraduates big with wisdom (p.59).

Tapper and Palfreyman (2000) argue further that it was the tutorial systems at Oxford and Cambridge that led to the subsequent development of group work in English-speaking universities in a way that was different from universities in mainland Europe.

Despite this impact, there has been a paucity of research into the Oxbridge tutorial systems and where these systems have been considered, they have largely been considered from the perspective of those who teach, rather those who learn, within that system. For example, Palfreyman (2001) offers a number of different accounts of the tutorial system from the perspective of tutors. This paper seeks to look at the tutorial system, and in particular, the Oxford tutorial system from the perspective of students. A study is reported that focused on developing an understanding of the different ways in

which students understand the 'Oxford Tutorial'. It is argued that this study has relevance outside of the University of Oxford because it adds to a growing literature on students' conceptions of their academic tasks, which suggests that these conceptions are related to the quality of their learning.

The 'Oxford Tutorial'

There are two factors that differentiate the 'Oxford Tutorial' from tutorials in other UK universities, apart from Cambridge, and, therefore, make the literature on these tutorials (for example, Anderson 1997) less relevant to the Oxford context. The first is that at Oxford the tutorial is a part of a learning system and the second is the size of the tutorials.

The 'Oxford Tutorial' is part of a learning system that involves a period, usually a week, of intensive study, the preparation of some work, whether an essay or completion of a problem sheet, followed by the tutorial itself. Students usually have about 3 tutorials a fortnight and report spending about 13 hours preparing for each tutorial. First year students report spending less time preparing than final year students (11 hours compared to about 14 hours) and arts and social science students report spending longer preparing than science students (about 15 hours compared to 9 hours) (all figures from the Commission of Inquiry 1997).

The size of tutorials varies with 1 tutor working with between 1 and 6 students. The Commission of Inquiry (1997) found that the most common size of tutorial was 2 students but that tutorials in social sciences, sciences and engineering tended to be bigger

than those in the arts. This is smaller than tutorials in other institutions in the UK. For example, Tapper and Palfreyman (2000) report that ‘tutorials’ at the University of Sussex involve 12 or more students.

The structure of tutorials vary; tutors have autonomy in deciding how to structure them and what content to focus on in tutorials. However, a general structure appears to be that there will be an interrogation, whether questioning or discussion, of the work that the student(s) have completed in preparation for the tutorial. This work may be handed in before hand, in the case of an essay it may be read out in the tutorial, or the tutor may take in the work at the end of the tutorial or not at all. The discussion usually starts with the student(s) being given the opportunity to ask any questions they have about the subject matter and proceeds from there.

Different commentators have had very different views of the effectiveness of the tutorial. Moore (1968), based on his experience as a tutor at Oxford, emphasised three cardinal principles of the tutorial: catering for the individual, the co-operation between tutor and student and a particular view of knowledge. He argued that the individual nature of the tutorial allows each student to learn at their own pace and to ask any questions they may have. It also allows the tutor to adapt the process to the student’s learning needs and to give students immediate feedback on their performance. He argued that the tutorial relationship should be one in which two minds worked on the same problem and that it is an opportunity for intellectual growth for the student *and* the tutor, in which the student should gradually acquire independence from their tutor. Finally, Moore argued that, in

the tutorial, knowledge is seen as contested. The undergraduate has the opportunity to put forward his or her own ideas and present a critical analysis of a particular problem or proposition. Moore felt that his view of the tutorial system was best summed up by Reeves:

“[T]here is no substitute for the individual tutorial, either singly or in pairs. It’s function is *not* to instruct: it is to set the student the task of expressing his thought articulately and then to assist him in subjecting his creation to critical examination and reconstructing it. The charge of spoon-feeding so often levelled against the tutorial method implies a complete misunderstanding of its function” (Dr Marjorie Reeves, Vice-Principal of St Anne’s College, Oxford quoted in Moore 1968).

In contrast to Moore, Elton (2001) has argued that tutorials at Oxford, as well as Cambridge, are centred around the tutor rather than on the discussion of students’ ideas and that they do not normally result in high quality student learning. He argued that “It may be noted that the famous Oxbridge tutorial is firmly teacher centred and, except for the most able students, may not normally lead to deep learning” (Elton 2001).

However, the ‘Oxford Tutorial’ has not been examined from the perspective of students. This study sought to examine the following questions: What do students understand to be the role of tutorials in their learning? Are there relations between their conceptions of the tutorials and their understanding of the role of the work they complete in preparation for

the tutorial? Do students' understandings of their own role in the tutorial and the role of the tutor vary with their conceptions of the 'Oxford Tutorial'? Are the conceptions of knowledge that students adopt in the tutorial related to their conception of the tutorial?

Method

In examining students' conceptions of their tutorials, this study sought to examine their conceptions of a particular academic task. Whilst students' conceptions of the 'Oxford Tutorial' have not been examined before, other studies have looked at students' conceptions of other academic tasks. For example, Hounsell (1997) examined students' conceptions of essay writing, whilst Light (2002) has examined students' conceptions of creative writing. These studies draw on work on students' conceptions of learning (Säljö 1979, Marton et al 1993) for both their methods (semi-structured interviews) and their approach to analysing these interviews (phenomenographic). This was also the approach taken in the current study.

Twenty-eight undergraduates from a variety of disciplines and all years of study were interviewed about their experience of studying at Oxford. The students were volunteers. They were asked to describe a typical, but actual, week of study. The interviews were then structured around this description, with particular attention paid to the meaning to students of various activities that they engaged in, in their studies. In all cases this led to a discussion about the tutorial system.

The interviews were taped and transcribed. They were analysed using a phenomenographic approach (Marton and Booth 1997). The unit of analysis was students' conceptions of their tutorials and thus the focus was on qualitative variation in the ways in which the students experienced tutorials at Oxford. The different meanings that students assigned to tutorials were used to form categories of description. The aim was to offer a hierarchy of empirically grounded and logically consistent categories of description of the different ways in which students experienced tutorials. The analysis was carried out by the author, with a colleague who verified that the categories could be substantiated using the interview data.

Results

Four qualitatively different ways of understanding the role of tutorials were constituted in the analysis of the interviews:

1. Tutorials as the tutor explaining to the student what the student does not understand
2. Tutorials as the tutor showing the student how to see the subject in the way that the tutor does
3. Tutorials as the tutor bringing things into relation to each other to help the student develop a new perspective in the wider context of the discipline
4. Tutorials as the tutor and the student exchanging different points of view on the topic and both coming to a new understanding.

As with students' conceptions of learning (for example see Marton et al 1993), the four conceptions of tutorials formed a nested hierarchy. This implies that a student who adopts Conception 4 will also be aware of the other three conceptions. However, if a student adopts Conception 1, it cannot be inferred that they are aware of Conceptions 2, 3 and 4.

These qualitatively different understandings of the tutorial were found to be related to different student understandings of the role of work that was completed in preparation for the tutorial, the role of the student and the tutor in tutorials, and the conception of knowledge that students adopted in the tutorial. These dimensions are included in descriptions of the categories below. The descriptions of categories are illustrated with quotations from students. It should be noted that, as the conceptions that are constituted by phenomenographic analysis are based upon an analysis of all of the interview transcripts within a study, it is unusual to find quotations that perfectly illustrate each conception. The student quotations given in this paper were selected because they give *some* sense of the conception they are illustrating, it is certainly not suggested that they will provide readers with a *complete* sense of each conception.

Conception 1: Tutorials as the tutor explaining to the student what the student does not understand

Students adopting this conception saw the purpose of tutorials as being to check their progress and to ensure the efficient transfer of information relevant to the topic² that was the subject of the tutorial. The role of the preparation work was for the student to produce an artefact, whether an essay or solutions to a series of problems, that would be used by

the tutor to assess how much the student knew, to help the student gain knowledge that they could use in the tutorial and to help them develop an overview of the topic. The students adopting this conception saw that their role in the tutorial was to be tested by their tutor, to use the information they had gained to answer the tutor's questions, and to absorb information from the tutor. They saw that the tutor's role was to test the student and to provide the student with new information on the topic. Thus under this conception of tutorials, students' perceived knowledge as accumulative and uncontested. This is not to say that they felt the truth could always be found but rather that they felt that new knowledge could be added to old knowledge unproblematically and that, given a certain set of facts, there was a 'correct' way to interpret them. Two quotes from students illustrate some of these dimensions.

Doing the [preparation] work is the important thing, then what you get out of the tutorial is 1) you see whether you've done it right or not, 2) you're learning whether you've done it in an efficient way or whether there's a better way of doing it, 3) you learn whether it's really that relevant or not. . . So the purpose of them is to make sure you know it, teach you the good ways of doing it, giving you more information, telling you what's relevant, and that's about it.

(Fourth Year Physicist)

It varies very much between tutor and tutor, some tutors' tutorials are like a lecture, you come away with very organised notes, adding *a lot* to the

information you didn't know before, which is very useful. Other times you leave the tutorial not feeling like you've gained a lot from it ... Some people write essays on a very high theoretical plane where I just couldn't follow them, and some people, like me, try to stick to facts and relatively simpler ideas. So the type of tutorial that suits you depends on that a lot. I like dealing with facts, I like information I can say 'I know this is true, or within reasonable doubt I know this is true' because you can't know for certain in history.

(Second Year Historian)

Conception 2: Tutorials as the tutor showing the student how to see the subject in the way that the tutor does

Students adopting this conception of tutorials considered the purpose of tutorials to be for the student to get to understand the topic in the way that the tutor did. They saw the role of the preparation work was for the student to show the tutor how much they had understood the material that they had studied for the tutorial. They perceived that their role was to discuss the tutor's ideas in relation to the ideas they had gained from their preparatory work, whilst they saw the tutor's role was to ask students questions that took them beyond their initial understanding of the topic and to explain the topic in the way that they viewed it. In this case, students saw knowledge as uncontested but it was not seen as accumulative as, under this conception, an understanding of the topic was based on more than an accumulation of facts. It was rather concerned with seeing the material

in the 'correct' way. Again, quotes from two of the students interviewed are used to illustrate this conception.

[The purpose of tutorials is] to put forward the things that I've discovered from the reading that I've done, to ask questions of areas that I'm not too sure about and to have my knowledge of the subject probed by the tutor through their questions and then have them explain the way that they view it and discuss those interpretations of the particular topics, and then get a better understanding of the topics as a whole, and a much deeper understanding . . . The tutors tend to explain the slightly more subtle aspects of the different parts of the work that we're investigating. They tend to ask questions, rather leading questions, and then they lead you through the answers that they want you to come to until you come to the conclusion that they hope you do come to, and by then you tend to understand what they're trying to get you to understand and it just gives you a better understanding of the topic.

(First Year Biochemist)

Basically, I'll ask him a question – often it'll be that he works through it on the board and he just keeps on working through it . . . I basically write down what he is doing and try to understand what he is doing. Sometimes it's just that I haven't got a picture in my mind of what is happening – I can do all this maths, but I don't have an image. I'm not very good at drawing graphs of these things in my mind and I can't just see what would happen say to a

billiard ball in a field and I can't see why it's flying a particular direction, whereas he'll be able to visualise what it's doing ... I get a lot of new ways of thinking about problems out of them basically. I get a lot out of them because I pick up their ways of approaching problems.

(Third Year Physicist)

Conception 3: Tutorials as the tutor bringing things into relation to each other to help the student develop a new perspective in the wider context of the discipline

Students adopting this conception saw the purpose of tutorials as developing their ideas to gain a new perspective on the topic, and this new perspective may also have been new to the tutor. They saw that the role of preparation work was for them to develop an argument about the topic that was then the focus of the tutorial. They saw that their role in the tutorial was to discuss the relations that the tutor developed in relation to the students' preparation work, whilst they saw that the role of the tutor was to develop these relations. Under this conception of the tutorial, knowledge was seen by the student to be contested in that they no longer appeared to perceive that there was one correct way to think about issues within their discipline. Two illustrative quotes are given below.

I see it [the tutorial] as an opportunity really to show off a bit, show him what I can do, and then get his better and more learned ideas for where I could be going in the future. They are your opportunity to talk to this very wise person, who knows all the answers, and you don't want them giving you the answers,

but you want them to make you think differently, and that's what it's about, thinking differently.

(First Year English)

The most scary tutor I ever had was quite terrifying actually. He was very nice but his tutorials, you used to come out of them like you'd forcibly rearranged the ideas in your head, and you'd actually understand it in the end. He'd pick out things you didn't even realise you'd misunderstood and interrogate you about it until you knew what you'd misunderstood. That's what tutors should do really otherwise you don't learn anything from them, so there's not really much point in them teaching you really. They may as well give you a list of books to read for the term and that'll be it. If they don't question you and find out what you haven't understood, then you tend not to learn anything new from them. You might learn new facts, but you won't gain any new understanding. By being asked questions you find out what you have and haven't understood, and are pushed into understanding things yourself, as opposed to just told what your tutor thinks about them . . . If the tutor asks you a factual question they probably know the answer. If they ask you what you think about something, they generally don't know the answer. Well obviously they don't know what you think about it, but they also don't know what you *should* think about it.

(Second Year Experimental Psychologist)

The quotation from the psychology student is interesting because it gives evidence for the four conceptions forming a nested hierarchy. The first part of the quotation focuses on the tutor's role in the tutorial being to ask questions that takes the student beyond their initial understanding as in Conception 2. However, the second part of the quotation moves to focus on the student developing their own understanding of the topic that may differ from the understanding of the tutor.

Conception 4: Tutorials as the tutor and the student exchanging different points of view on the topic and both coming to a new understanding

Students adopting this conception of tutorials saw that the purpose of tutorials was for the students and tutors to develop their ideas about the topic. As with Conception 3, they perceived that the role of their preparation work was for them to develop an initial argument about the topic that was then the focus of the tutorial. The role of both student and tutor was to discuss their ideas about the topic in relation to the students' preparatory work, whilst the tutor had an additional responsibility to chair the discussion. Here the relationship between the student and the tutor was seen as more reciprocal, whilst, as with Conception 3, students saw knowledge as contested.

It will often involve a discussion of both the plays' relation to each other and it's basically a discussion where you can either agree or disagree with whoever and it keeps going until the tutor says 'right, that's the end'. In that respect it doesn't particularly have a conclusion to it like an essay would, it just gets you thinking and often leaves you with a different perspective at the

end of it, which is pretty much what I would want to get out of it. . . The whole idea is that it will prompt you to re-think what you've written or to add something new to it.

(Second Year English)

The apogee of the tutorial is where you don't know, the tutor doesn't know, but between the two of you you're going to analyse this thing. I love it when you're in with someone like Professor X and he's just whacking books off the shelf, getting maps out. He's there on his hands and knees and between the two of you, you manage to clarify something and that's a tremendous experience.

(Third Year History)

Relations between students' conceptions of tutorials and other factors

There are many factors that may impact on students' conceptions of tutorials. Prosser and Trigwell's (1999, Figure 2.2, p.17) model of student learning suggest a number of type of factors that might relate to students' conceptions of tutorial. These include aspects of students' prior experience, such as their social class and schooling, students' perceptions of their learning environment including their perceptions of the expectations of their tutors and their tutors' approaches to and conceptions of tutorials, and aspects of the teaching and learning context, such as students' discipline and their year of study. In this small-scale qualitative study with purposive sampling, it is not possible to generalise about any of these important relations.

However, it is possible to comment on the relations between students' conceptions of tutorials and their discipline and year of study. Tables 1 and 2 show the relations between the highest conceptions of tutorials that students appeared to express and their broad discipline³ and year. The tables show that there are no strong relations between these variables, with the results spread across most of the categories. In this small sample, there are no students in the Sciences or in in the first year of their studies who expressed the fourth conception of tutorials⁴ (the tutorial as a joint enterprise between tutor and student). Whether these differences are related to the structure of disciplines, in the case of students' studying the Sciences, and to students learning to engage with tutorials over their time at Oxford, in the case of students in their first year of study, are interesting questions that are certainly worth examining in future studies. However, given the small number of students involved in this study, these relations are inconclusive

TABLE 1 ABOUT HERE

TABLE 2 ABOUT HERE

Discussion

To return to the differing views of the tutorial of Moore and Elton, it seems that both are held by some students but not by others. Some students, in accordance with Elton⁵, conceive of the tutorials as a teacher-centred learning environment in which they are instructed by their tutors (conceptions 1 and 2), whilst others, in line with Moore, see that tutorials offer an opportunity for their ideas to be subjected to critical examination through which these ideas are reconstructed (conceptions 3 and 4).

This study is the first to examine students' conceptions of the 'Oxford Tutorial' and, as such, had a number of potential limitations. The sample was selected to be large enough to maximise the variation in students' conceptions of tutorials, although it was not selected in a way that makes the results generalisable. However, Trigwell and Ashwin's (2002) quantitative study of the Oxford learning environment more generally, which used questionnaire items based on this study, suggests that the variation in the ways students' conceive of tutorials constituted in this study works for a larger, generalisable, sample. Second, unlike Anderson's (1997) study, this study was not designed to offer an insight into how students' understanding of tutorials developed over time and, unlike Mann's (2000) study of students' experiences of reading, it did not seek to give a full and rich description of the meaning of the phenomena for each of the students. Rather, the focus was on the variation in the ways a group of students' conceived of tutorials rather than on fully describing individual students' views or examining how these developed over time. This approach was adopted because if an understanding of the critical aspects of variation in the ways that students' experience tutorials can be developed and these can be related to the quality of students' learning, then this can offer a way in which the learning of these students can be improved.

The results of Trigwell and Ashwin's (2002) study cited above, which used items developed from the findings of this study, seem to suggest that this approach is a fruitful one. In their sample of 155 students from one Oxford College, they found that the students with more sophisticated conceptions of tutorials (Conceptions 3 and 4) were more likely to perceive their learning environment as supportive, engage in higher quality

learning (as measured by their approaches to learning), and to anticipate a higher learning outcome. This suggests that students' conceptions of tutorials, that is their understanding of the academic task undertaken as part of the tutorial system, is related to their successful engagement in that system. This presents the possibility that, if students can be helped to develop a more sophisticated understanding of the role of tutorials, or academic tasks more generally, in their learning, then the quality of their learning can be improved.

The suggestion that students' understanding of their academic tasks are related to their successful engagement in that system, is echoed in literature looking at other higher education contexts; for example, Mann's (2000) work on students' experience of reading and Laurillard's (1997) work on problem solving. This work, along with Hounsell's (1997) findings on students' conceptions of essays and Light's (2002) on students' conceptions of creative learning, seems to be part of a growing literature on students' conceptions of academic tasks. When placed in the context of this literature on students' conceptions of academic tasks, the current study begins to have implications for teaching and learning situations outside of the 'Oxford Tutorial'. For example, peer learning and ICT systems are often suggested to offer ways of improving students' learning because of the individualised attention that they can offer students. In the case of peer learning, Topping (1996) argues that peer learning in reducing the student-to-peer tutor ratio offers increased 'time on task' and increases students' opportunities to respond to their peer tutor and to have their errors corrected. However, the current study suggests that students' conceptions of the academic task that they are engaged in will affect the way they engage in it and the quality of their learning outcomes. Thus, in the case of peer

learning and ICT-supported learning, the ways in which students understand these activities will impact on the ways in which they engage in them and the quality of their learning from their involvement in these activities. This suggests that any system of instruction, whether individualised or group based, will still need to take account of students' differing conceptions of their academic task and attempt to address them if they are to lead to higher quality student learning.

Notes

1. An earlier version of this paper was presented in at the Improving Student Learning Symposium (Theory and Practice – 10 Years On), Brussels, 4 – 6 September 2002.
2. The words 'topic' and 'material' are used generically in this paper to denote the body of knowledge that is the focus of a particular tutorial.
3. This was defined based upon the University of Oxford's five divisions. Students from degree courses within the divisions of 'Humanities' and 'Social Sciences' were allocated to 'Humanities and Social Sciences', whilst students from degree courses within 'Mathematical and Physical Science', 'Medical Sciences' and 'Life and Environmental Sciences' were assigned to 'Sciences'.
4. Of the 11 students in the first year of their studies six were from the Sciences and five from the Humanities and Social Sciences.
5. Although Elton could argue that both positions were covered by his caveat of 'except for the most able students'.

Acknowledgements

I would like to thank Keith Trigwell for his contribution to this paper in terms of his involvement in interviewing the students, verifying the analysis of the interviews and discussing the ideas contained in the paper.

References:

Anderson, C. (1997). Enabling and shaping understanding in tutorials. In F. Marton, D. Hounsell and N.J. Entwistle (eds) *The Experience of Learning: Implications for Teaching and Studying in Higher Education*. (2nd edition). Edinburgh, Scottish Academic Press, 184-197.

Elton, L. (2001). Research and teaching: conditions for a positive link. *Teaching in Higher Education*, 6, 43-56.

Commission of Inquiry (1997). *Commission of Inquiry Report*. Oxford, University of Oxford.

Hounsell, D. (1997). Contrasting conceptions of essay writing. In F. Marton, D. Hounsell and N.J. Entwistle (eds) *The Experience of Learning: Implications for Teaching and Studying in Higher Education*. (2nd edition). Edinburgh, Scottish Academic Press, 106-125.

Laurillard, D. (1997). Styles and approaches in problem-solving. In F. Marton, D. Hounsell and N.J. Entwistle (eds) *The Experience of Learning: Implications for Teaching and Studying in Higher Education*. (2nd edition). Edinburgh, Scottish Academic Press, 126-144.

Light, G (2002). From the personal to the public: conceptions of creative writing in higher education. *Higher Education*, 43, 257-276.

Mann, S (2000). The student's experience of reading. *Higher Education*, 39, 297 –317.

Marton, F. and Booth, S. (1997). *Learning and Awareness*. New Jersey, Lawrence Erlbaum Associates.

Marton, F., Dall'Alba, G. and Beaty, E. (1993). Conceptions of learning. *International Journal of Educational Research*, 19, 277-300.

Moore, W.G. (1968). *The Tutorial System and Its Future*. Oxford, Pergamon Press.

Palfreyman, D. (ed) (2001). *The Oxford Tutorial: 'Thanks, you taught me how to think'*. Oxford: Oxford Centre for Higher Education Policy Studies.

Prosser, M. and Trigwell, K. (1999). *Understanding Learning and Teaching: The experience in higher education* Buckingham: Society for Research into Higher Education and Open University Press.

Rose, J. and Ziman, J. (1964). *Camford Observed*. London, Victor Gollancz.

Säljö, R. (1979). Learning in the learner's perspective. I. Some common sense conceptions. *Reports from the Department of Education, University of Göteborg*, No 76.

Tapper, E. & Palfreyman, D. (2000). *Oxford and the Decline of the Collegiate Tradition*. London: Woburn Press.

Topping, K. (1996). *Effective Peer Tutoring in Further and Higher Education*. Birmingham, Staff and Educational Development Association.

Trigwell, K. & Ashwin, P. (2002). Evoked Conceptions of Learning and Learning Environments Paper presented at the 10th International Improving Student Learning Symposium, Brussels, September.

Tables

Conception of tutorial	Broad Discipline	
	Humanities & Social Sciences	Sciences
1	3	5
2	4	6
3	4	3
4	3	0

Table 1: The relations between students' conceptions of tutorials and their broad discipline.

Conception of tutorial	Year of Study			
	1 st	2 nd	3 rd	4 th
1	5	2	0	1
2	3	5	1	1
3	3	3	1	0
4	0	2	1	0

Table 2: The relations between students' conceptions of tutorials and their year of study.