

RESEARCH INTO STUDENT LEARNING AND UNIVERSITY TEACHING: CONTRASTING PERSPECTIVES AND LEVELS OF FOCUS¹

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Abstract: This article looks at research into student learning and university teaching, looking specifically at the differing perspectives and levels of focus typically adopted. The perspectives are those of researchers, students, and teachers, while the differing levels of focus are based on the individual students' experiences of learning, the classroom context and teaching-learning environment, and the institutional level and academics' perceptions of teaching. These differences of perspective and focus are illustrated through three specific studies carried out by the authors, and suggest the need to capitalize on the differing perspectives to broaden the understanding of the multifarious influences on student learning.

Aspects of the historical development of this research area

In 1972, Butcher and Rudd commented acerbically on the fact that, until the previous decade, universities had done research on almost every topic except their own work as teachers. And the research that was beginning to be carried out around that time was, even then, almost entirely based on the researchers' own perspectives, derived

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from psychological theory and their own experiences as students and teachers. Typical studies sought to predict future academic performance through the use of general psychological constructs such as *motivation*, *personality* and *cognitive ability* with large samples of students and well-validated psychometric instruments (Entwistle, 1984). The focus was on relationships among variables, rather than on the experiences of the individual learner, although Perry (1970), working at Harvard, had already used interviews with students to suggest a set of stages in intellectual and ethical development, based on the students' own experiences, so suggesting an alternative way forward.

That study was, unfortunately, largely ignored after its publication, even though it became influential in the following decades. It was left to a research group in Gothenburg to make this change in perspective more accessible in the literature. Marton and his colleagues made fundamental contributions by drawing attention to the importance of the student perspective in understanding how students learn by focusing their research on the experiences of individual students. In that way, they also shifted the nature of the research by developing a method of rigorous qualitative analysis of interview transcripts (later described as *phenomenography* – see Marton & Booth, 1996), and also by showing the necessity of identifying constructs that were contextualized, emerging specifically from the situation and behaviour they sought to describe.

The work of Marton's research group in Gothenburg (Marton & Säljö, 1976) used interviews in a naturalistic experiment to explore how students went about the reading of an academic article. A focus on the individual student allowed the student perspective to emerge more clearly, even though qualitative analyses must still contain traces of the perspective and academic background of the individual researchers. The Gothenburg research identified the influential construct of *approaches to learning* (Marton, 1975; Marton & Säljö, 1984), and research stemming from this perspective and level of analysis developed rapidly thereafter, with a wide variety of studies looking at student learning and establishing the importance of the distinction between deep and surface approaches to learning. Although many of the studies kept the analyses at the level of the individual, the limitations of small samples meant that the concepts also needed to be

operationalised for use in inventories that could then be used in large-scale surveys. One of the early inventories – *Approaches to Studying Inventory* (Entwistle & Ramsden, 1983) – constructed items from the actual phrases used by students in explaining their approaches, and so retained the student perspective and language to an important extent. Using statistical analysis of inventory scores, certainly reduced the subjectivity of interpretation, but also distanced those interpretations from the actual experiences reported by students.

Marton and his collaborators, in Sweden and elsewhere, also stressed that the approach to learning was not a consistent characteristic of a student, but must vary, depending on the content being learned and on the academic context within which the learning took place (Marton, Hounsell & Entwistle, 1984). And so research studies began to ask students about their experiences of being taught, which again led on to inventories, such as the *Course Perceptions Questionnaire* (Entwistle & Ramsden, 1983). The use of later versions of these inventories, and several others (e.g. Biggs, 1986; Ramsden, 1991; Vermunt, 1998) has enabled relationships to be established between perceptions of various aspects of teaching and the quality of student learning, showing not only that experiences of teaching affect approaches to learning, but also that existing approaches affect students' perceptions of the teaching-learning environments they experience (Richardson, 2006). And this interplay among perceptions of teaching, approaches to learning, and academic performance is still being actively explored (Karagiannopoulou & Milienos, 2015).

The final step in this exploration of teaching and learning at university involved introducing the *teacher's perspective*. The research by Prosser and Trigwell (1999) has been particularly influential in providing contextualised conceptualisations of university teaching and describing an important difference among teachers that parallels the deep/surface dichotomy in student learning. The equivalent dichotomy among university teachers' described their *approaches to teaching*, involving a characteristic focus on either the subject matter from the teacher's perspective or on ways of helping students to come to understand the subject content for themselves, *transmitting knowledge* or *encouraging conceptual development*. Prosser, Trigwell and their collaborators also

found academics differed in how they described their understanding of their subject, their research, and their teaching, with a major variation in whether they saw the content as a *whole* or as a series of more separate *parts* (Prosser et al., 2005). Although these dichotomies by no means do justice to the complex variations in teaching approaches, they have proved useful yardsticks to show how these very different perspectives on the nature of teaching encourage contrasting approaches to learning in students (Trigwell, Prosser & Waterhouse, 1999).

This brief summary provides the background to the rest of the paper by indicating how ideas about salient aspects of student learning have been changing over the last forty years, and how teaching and learning environments are now seen, in general, to affect the quality of student learning. We now come to the three specific studies mentioned earlier which will be used to illustrate the kinds of contribution made by research at the individual, group, and institutional levels, and by combinations of these levels.

Focusing on individual students' experiences of learning

A recent example of this level of analysis comes from two analyses of student interview data. The first, involved twenty final-year psychology students in a Greek university (Karagiannopoulou, 2010), while the second carried out a detailed case study of individual students from the previous study (Karagiannopoulou & Entwistle, 2013). This case study focused on four students (later extended to seven) who had described their conceptions of learning, approaches to learning, and experiences of teaching and assessment. These aspects, and the relationships between them, provided insights not only into which approaches the students were using, but also how their perceptions of open-book exams had affected their way of preparing for those exams.

One important aspect of the extracts was the extent to which these students had each developed a sense of their own identity as a learner. This seemed to explain a good deal of their continuing study behaviour, whether as a dependency on rote learning and then mimicking the tutor's understandings, or as a determination to reach deep understandings for themselves through a critical attack on evidence and alternative interpretations, as illustrated below.

“I’m a kind of person who believes I can trust only the ‘formal’ sources of knowledge.”

“I’m a kind of person who is always seeking meaning, that’s something I’m used to. That’s me!”

And this powerful sense of how such students preferred to learn had marked effects on their reactions to the exam format and to their feelings about their tutors. We found that two of the students had assumed that open-book exams didn’t require serious revision, adopted a surface approach, and failed on more than one occasion. Eventually, they realized that learning at university depended on reaching an academic understanding, but they still preferred to reproduce the tutor’s understanding rather than developing their own. And even when students had understood the purpose of the open-book exam, the format viewed in relation to the teaching could leave feelings of unease, humiliation, or even anger.

[In the open-book exam] you need to read between the lines. It’s something which you should get from the lectures, something underlying the lectures, [so] you have to be in touch with her way of thinking [and yet] this is not clear at all. [The tutor] builds up an argument or an approach and [thinks] we should align our thinking to her own understanding and perspective. I don’t believe that things should work like that in the exams. This is not objective knowledge.

Tutors ask us to develop our own understanding, but they eventually want us to reproduce their ideas. [In the past] I presented my own perspective [in the exam], I was critical of the theories, and I failed. Now, I develop my answer close to the tutors’ ideas, adding only few personal thoughts, if necessary, but I feel humiliated. They treat us like machines; we’re asked to regurgitate knowledge. I’m a kind of person who is always seeking meaning, but I [don’t want] to develop my understanding in ways that meet the tutors’ [demands] or in ways approved by them. My understanding is my own business. (Karagiannopoulou & Entwistle, 2013: 90)

These two students were reacting strongly against what they felt was an unfair aspect of assessment, interfering with their freedom to develop their own personal understanding. However, other students reported

a more satisfactory experience. One student, for example, appreciated what the tutor was offering, but still found the prospect of 'going solo' daunting.

It's her broad perspective towards the subject as a whole, how she, as a person, deals with the subject and sees things through the lens of her particular approach. This is the most difficult thing – to get into her perspective, [and] also it is difficult for me to keep going, once I get stuck. ... I sometimes have the feeling that I need intimacy... That may sound childish, but I feel like I need someone to get me into it, who can help me to overcome the difficulty. (new analysis)

Only one of the students who was determined to develop her own understanding had found that her tutor had actively encouraged that independence, and given her sufficient 'space' and self-confidence to use that approach in the exam. This particular experience, seen in relation to the other comments, and the very positive emotions it generated, led us to suggest the importance of a *meeting of minds* in helping students to use teaching as a springboard into their own explorations of the subject.

Tutors [are] concerned about us being able to think critically on the issues we have been taught [and] to value, for ourselves, real understanding *per se*. They also expect us to be able to build up our own understanding of an issue through the lens of the underlying parameters. [I try] to take a critical stance on the material. The germ of it can be found in tutor's thinking, which is "feeding" mine. I have a direction, her perspective. This gets me into more thinking. I initially try to understand the issue, by putting myself in the tutor's shoes, how she appeared to personally think about an issue, the issues raised again and again – her convictions. You start with the tutor's perspective, you bring in previous knowledge and experiences, and that gets you to a different end from where you started. (Karagiannopoulou & Entwistle, 2013: 91)

These case studies showed more clearly the strong influence of the affective elements involved in reaching a personal understanding, where positive experiences depended on having a tutor who *cared* about

students' own understandings. Positive experiences could provide a student with a *sense of confidence* to explore her own understanding, using the tutor's ideas as a jumping off point for her own critical analysis of the material being studied and sometimes leading her away from the tutor's interpretations. The negative experiences, however, could undermine students' self-confidence and push them more towards the perceived safety of surface, reproductive approaches, although these could still be seen as unacceptably limiting.

Of course, this analysis couldn't be claimed to be generalisable, but this detailed focus on individual students provides important insights into what lies behind the relationships between variables that come from the larger samples obtained in surveys. It also suggests how the same teaching and assessment context can influence students' learning in very different ways. Moreover, it offers a different type of evidence about the direction of influence in the links between approaches and perceptions of the teaching and learning environments, in terms of the explanations provided by students themselves of their reasons for changing their approaches to learning, due to their perceptions of the requirements of the exam or the tutor's attitude and teaching.

Focusing on classroom context and teaching-learning environment

There is a great advantage in using different levels of analysis in alternation to try to tease out what lies behind the relationships between teaching and learning. We have seen the insights possible from research at the individual level, and here we look at the complementary contribution of research at the group level, using as an illustration the TLRP research project – *Enhancing teaching-learning environments in undergraduate courses* (Hounsell & Entwistle, 2005). In this project, the purpose was to examine the relationship between approaches to learning at the start and at the end of specific modules in four subject areas at eleven British universities, in relation to students' experiences of the teaching-learning environment. Teaching staff were also actively involved in interpreting the findings and thinking about ways of enhancing their teaching. Students completed questionnaires on the two occasions (some 6500 in all), with sample groups of them also being interviewed

to throw more light on their learning experiences and feelings about the module (Entwistle, McCune & Hounsell, 2003).

Both questionnaires asked students about their approaches to learning, while the second also included items related to their experiences of the teaching and how much they had learned. Although there were general findings showing a consistent, positive relationship between deep, effortful approaches to studying and self-ratings of academic achievement, there were also important differences, not only across the four subject areas (Entwistle, 2009), but also between the specific modules within the same discipline, as we shall see.

Table 1 presents, as an illustration, one analysis of three modules taught in analogue electronics, showing how the percentage responses to individual items on approaches to learning and studying changed during the module. The percentage agreement with statements about their initial aspirations and their approaches to learning before and during the module can be found in the top half of the table, while the lower half shows the students' experiences of teaching, reported at the end of those same units.

In Course A we see a marked decrease in deep and strategic approaches (effort and organized studying) and a comparable increase in surface approaches, with students indicating, in particular, too fast a pace in lectures and too much work to cover, although the teacher gave good feedback on the work carried out. The two other courses showed only small drops in the deep approach, although students reported Course B as being difficult, rather dull, with very poor ratings on feedback. Course C showed positive reactions to most experiences of the teaching, except feedback, and yet the results were disappointing in this year group, attributable apparently to a lack of motivation ('wondering why they had ever come here') and effort (for details of the full analysis, see Entwistle, Nisbet & Bromage, 2005:28). Group interviews were used to explore how the students had experienced the influences on their learning, and their suggestions about how the teaching might be enhanced to make learning more effective.

Table 1. Percentage agreement with items from students in three course units

| Module (Numbers of students) | <i>Percentage agreement with items</i> | | |
|---|--|---------------|---------------|
| | A (94) | B (68) | C (54) |
| Aspirations before the unit | | | |
| I want to study the subject in depth | 87.2 | 77.9 | 61.1 |
| I sometimes wonder why I ever came here | 5.2 | 14.7 | 29.6 |
| Approaches to studying (<i>before and during the unit</i>) | | | |
| I usually set out to understand | <i>Before</i> 95.6 | 87.5 | 81.2 |
| <i>(Deep approach)</i> | <i>During</i> 72.1 | 82.5 | 75.0 |
| Trouble making sense of things | <i>Before</i> 25.0 | 40.0 | 43.7 |
| <i>(Surface approach)</i> | <i>During</i> 61.8 | 55.0 | 34.4 |
| Generally put a lot of effort in | <i>Before</i> 60.3 | 77.5 | 53.1 |
| <i>(Effort)</i> | <i>During</i> 51.5 | 60.0 | 40.6 |
| Systematic and organised study | <i>Before</i> 65.9 | 62.5 | 46.9 |
| <i>(Study organisation)</i> | <i>During</i> 44.1 | 47.5 | 50.0 |
| Experiences of the teaching-learning environment | | | |
| Easy pace in lectures | 25.3 | 46.9 | 72.5 |
| Amount of work required was easy | 33.3 | 34.7 | 52.5 |
| Teaching fitted in with learning | 72.0 | 67.3 | 97.5 |
| Most of material was interesting | 45.3 | 34.7 | 82.5 |
| Plenty of examples were provided | 66.7 | 51.0 | 95.0 |
| Staff were patient in explaining | 81.3 | 81.6 | 92.5 |
| Feedback given made things clearer | 63.7 | 30.6 | 47.5 |

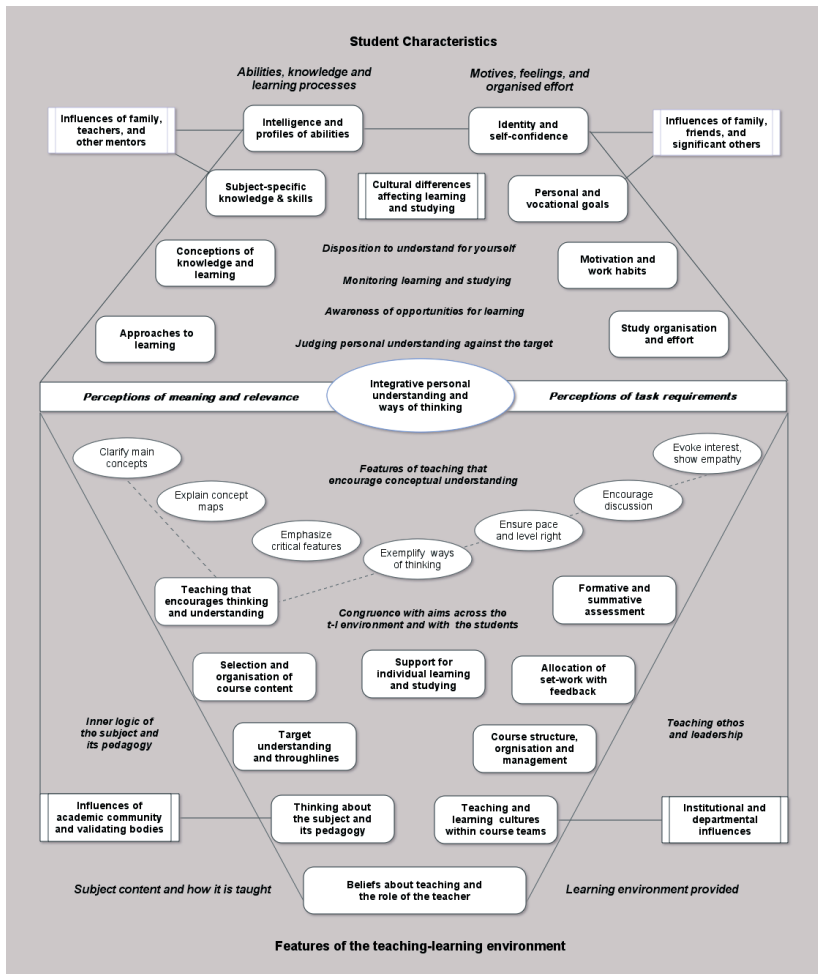
This analysis allows us to see how aspects of differing teaching-learning environments can affect the extent to which students in a specific class come to adopt deep or surface approaches to differing extents. The group interviews provided some evidence of causality from the views expressed about links between teaching and learning, but not as strongly as was found in the Greek case study discussed earlier. The approach also provides a perspective on teaching and learning that is potentially recognizable by both students and teachers, but the conceptualisation of the findings still contains a strong element created by the researcher.

The published findings looked at the more general relationships existing among the inventory scales in each of the four subject areas and led to a more theoretical exploration of the interactions among aspects of teaching and learning. Overall, we saw a pattern of interconnections affecting the quality of learning from what we called the 'inner teaching-learning environment' (Entwistle, McCune, & Hounsell, 2003 ; Entwistle, 2018, Chapter 11) that covered aspects directly experienced by the students. These findings, together with those from previous research, formed the basis of a heuristic model (Figure 1) designed to highlight some of the main influences on

learning outcomes, from the teaching, the learning environment, and the students own characteristics [Entwistle, 2009: 115].

This type of model cannot show the detail of the complex interactions involved; rather, it offers an invitation to explore the types of influences on student learning with each box representing one or more of the concepts that have been shown to influence student learning.

Figure 1. Heuristic model of influences on the quality of student learning



In the top section of the diagram are the concepts related to the characteristics of students, with cognitive aspects on the left side and affective ones, such as identity and effort, on the right. The bottom half covers influences related to the subject content and how it is taught, on the left side, and the rest of the learning environment within which the teaching takes place, on the right.

Underlying each of the concepts there is a substantial body of evidence about how it is thought to affect student learning, and several of the broader concepts could be 'unpicked' into sub-categories. This has been done in the model for *teaching that encourages thinking and understanding*, which has been expanded into the sub-categories above it (in the ellipses). Among them we see aspects met in the Greek case study, such as 'evoking interest and empathy', 'encouraging discussion', 'exemplifying ways of thinking', and 'clarifying main concepts'. But there are additional aspects that relate to large-group teaching, such as 'explain concept maps', 'emphasize critical features' and 'ensure pace and level right', while the boxes below indicate other related influences on the quality of learning, such as 'formative and summative assessment' and 'allocation of set work with feedback'.

Also shown in the diagram are some of the main theoretical ideas developed during the ETL project to explain the findings. The *inner logic of the subject and its pedagogy* (Entwistle, 2009) draws attention to the very different nature of the subject areas, with consequent differences in pedagogy, while the idea of *congruence of the teaching-learning environment with curricular aims* indicates the crucial importance of ensuring that all elements of teaching and assessment pull together in supporting student learning (Hounsell & Entwistle, 2005). There are also two outlying boxes which indicate some of the influences on teaching that are not experienced by students, such as those coming from the *academic community* and from *institutional* policies, as well as influences coming from outside the institution, such as from governmental policies and edicts. And it is these latter sets of influences that will be considered next to illustrate a still broader focus of the teachers' perspective on teaching and learning.

Focusing on the institutional level and academics' perceptions of teaching

Some years ago, Samuelowicz and Bain (1992) drew attention to a 'disjunction' that existed between university teachers' conceptions of teaching – their reflections on the nature of good teaching – and the methods they reported adopting in the classroom, suggesting that conceptions were based on an 'ideal' view of teaching, while actions were grounded in everyday experiences. They commented:

If this is the case, research might profitably be directed towards the factors (teacher, student, institution-related) which prevent academic teachers from acting according to their ideal conception of teaching and thus contribute to one of the mysteries of higher education – the disjunction between the stated aims (promotion of critical thinking) and educational practice (unimaginative coverage of content and testing of factual recall) so often referred to in the literature [Samuelowicz & Bain, 1992: 110].

An aspect of similar nature was highlighted by Kember and Kwan (2000), suggesting that teachers have a preferred or predominant approach to teaching, but tend to move away from their preferred approach and adopt an alternative approach when faced with conditions in the teaching-learning environment which they feel to be demanding it. A better understanding of this complex interaction between teachers and various different factors in their organisational environment, can be reached by looking more broadly at the conditions seen by academics as promoting good university teaching and those which are perceived as obstacles when trying to carry out good teaching.

In a recent case study of a single university in Iceland (Ólafsdóttir, 2014), data were analysed at different levels, using documentary evidence from the governmental and institutional levels, individual in-depth interviews with thirteen academic staff from four contrasting disciplines, and a questionnaire distributed to all tenured academics at the institution. The main aim was to identify what academics believed to be 'good teaching' and what they judged to be the conditions necessary to be able to teach in that way. The documentary data provided insights into the legislative framework within which the target institution set out its policy, and described the institutional framework within which the

faculties and departments operated. Analyses of the interviews identified the main aspects of the teachers' conceptions of 'good university teaching' and also the conditions they believed were facilitating or inhibiting their ability to carry it out. The questionnaire tested the commonality of the aspects found in the interviews, but also included the two scales featured in the *Approaches to Teaching Inventory* that indicated the relative emphasis on *conceptual development* or *information transmission* (ATI) (Prosser and Trigwell, 2004).

Factor analysis confirmed these two ATI scales represented in the ATI, while the remaining items in the questionnaire, covering the conditions fostering good teaching, formed four scales. Two aspects were seen as essential to good teaching, firstly, conditions 'encouraging active learning', which depended on appropriate class size, suitable classrooms, and students who were actively responsive in class and, secondly, conditions 'showing concern for student perspective', through providing formative assessment, with prompt and helpful feedback on the work, and also encouraging feedback from students on the design of the course and the teaching experienced. The remaining aspects involved the readiness to use their own research in their teaching, and the priority given to including exams as at least one of the assessment methods used.

Using cluster analysis of these six scales, three main groups were established. Two of these closely paralleled the ATI dimensions with emphases on either conceptual development or information transmission, but the third and largest group was more *pragmatic*, using teaching strategies drawn from each of the other approaches to teaching, as appropriate. There were noticeable differences in the proportions of staff in the different faculties found in the three clusters, suggesting the existence of varying teaching-learning cultures (Trowler, 2008), with the 'conceptual change' emphasis being strongest in the disciplines designated as 'soft-applied' and weakest in those seen as 'hard applied', with the reverse pattern for the 'information transmission' emphasis. These patterns would also appear to reflect the teaching practices in the broader academic communities (Entwistle, 2009).

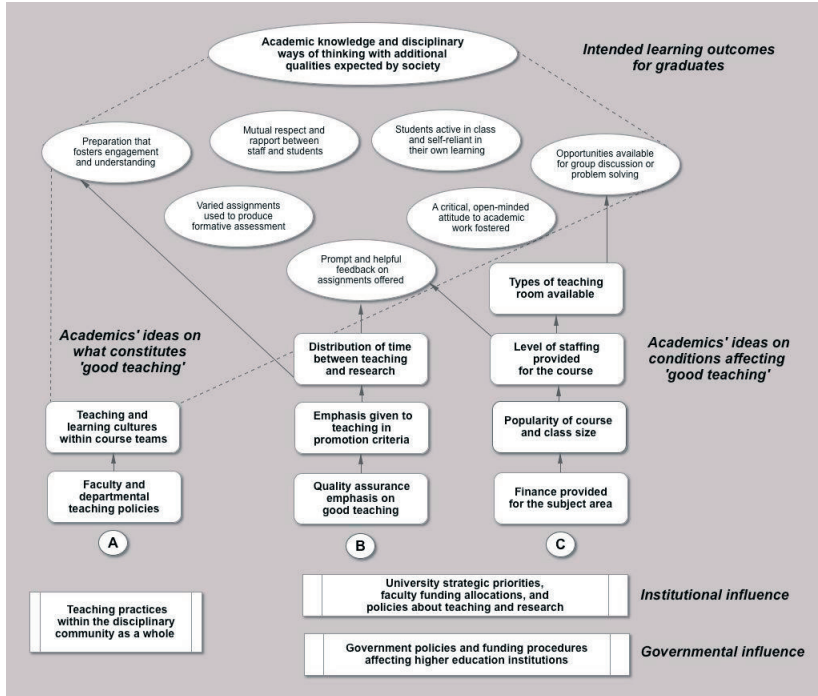
The findings also revealed various influences that were perceived as working against the favourable conditions described above and so were

seen as constraining the teachers' efforts to carry out good teaching practices. Thus, large classes were repeatedly described as an inhibitor to teaching of good quality in both interviews and questionnaire responses. Unsuitable teaching rooms, necessitated by having large numbers of students enrolled, was also frequently mentioned.

Unfavourable conditions for good teaching were also attributed to the differential financial resources being made available to faculties through the governmental financial model implemented within institutional policy. Staff in social science and humanities felt that the level of funding the university provided for their students, based on the governmental funding framework, did not give enough weighting to the need for them to engage in small-group teaching, which they saw as crucial to their subject area. There was a more general feeling across faculties that the funding mechanism was also creating undue pressure to recruit more students. Higher funding did enable more staff to be appointed, but having more less-qualified entrants changed the nature of the teaching required. A larger student intake forces staff to lecture to more first-year students, with reduced opportunities to use small group teaching, more varied assignments, or to provide rich and supportive feedback for students, even though such teaching is particularly important for less well-qualified students.

Another aspect found in the data mirrored conflicts created by the division of working hours between teaching and research, with staff having to decide how best to divide their working hours between preparing their teaching and generating strong research outcomes. Academics in this particular university are given specific time allocations for research, teaching and administration, and promotion is seen to be strongly dependent on research funding and publications. The especially strong emphasis laid on productivity in research and scholarly output, as reflected in promotion criteria and in quality assessment, was seen as being to the detriment of teaching.

These and other findings (Ólafsdóttir, 2013, 2014; Ólafsdóttir & Entwistle, in preparation) are summarised through another heuristic model (Figure 2), which portrays a broader set of influences than those shown previously in Figure 1. The elliptical boxes provide the staff perspective on 'good teaching'. The remaining boxes represent various perceived influences on these ideas and teaching practices that suggest

Figure 2. Heuristic model outlining aspects of 'good teaching' and conditions affecting its provision

three distinct *lines of influence*, with the arrows indicating some of the strongest connections identified.

The broadest influences are shown at the bottom of the diagram, coming from the government and the institution, which affect the teaching conditions experienced by staff, and from the academic communities as a whole, which affect how academics think about teaching their particular discipline.

Line A is related to the notion, mentioned earlier, of the *inner logic of the subject and its pedagogy*, as expressed within the disciplinary community and seen both in the policies of the faculty and the department, and in the teaching and learning cultures found in course teams. Taken together, these influences affect how academics teaching these courses are likely to conceptualise the nature of 'good teaching' in their subject area.

This university's policies on quality assurance, in line B, are strongly influenced by government requirements in Iceland, while its strategic priorities affect the emphasis placed on teaching in the promotion criteria and also the expected distribution of time between teaching and research. These pressures influence the time staff feel able to put into preparing their teaching and giving feedback to students.

Government and institutional policies affect line C by determining the level of finance available to departments for staffing provision, which affects the ability of staff to provide prompt and helpful feedback on students' work. The popularity of each degree course affects the number of students admitted, while the approaches of teaching that are feasible depend the type of teaching rooms made available. The combination of class size and the teaching rooms provided inevitably has a strong influence on the opportunities for learning in small groups.

Discussion and conclusion

This article has drawn attention to three contrasting levels of focus found in research into university teaching and student learning, namely the individual student's experiences of learning; the classroom context and the teaching-learning environment; and the perceptions of university teachers on the nature of 'good teaching' and constraints on teaching in that way. Researchers bring to these levels of focus varying theoretical perspectives, each with some of its own constructs, conceptualisations, and ways of interpreting evidence. They also can be seen to reflect differing aims in conducting the research, to *generalise*, to *contextualise*, and to *personalise*. Early on, the use of previously established psychological constructs followed the established practice of trying to *generalise* relationships between variables, but this approach often failed to provide useful or realistic implications for practice. It proved more valuable to create constructs and research methods that were designed specifically to *contextualize* the relationships between teaching and learning through the experiences of the people directly involved, and in terms of concepts that could be readily understood by them. But the emphasis on trying to explain relationships between constructs still distanced the researcher from the experienced reality. For this reason, in-depth interviews have been used to *personalize* the

individuals' experiences and to describe them, as far as possible, in the everyday discourse of the classroom. These varying perspectives, aims and research methods, importantly, offer potentially complementary ways of increasing our understanding of the influences on student learning and, indeed, many studies have already been using two of these levels together, although rarely all three.

Ideally, of course, the contrasting perspectives and levels of focus would need to be brought together within the same study, but even from the three very different studies outlined here, some useful clarifications of earlier thinking emerge. All three looked at how teaching influences learning. The ETL project illustrated the *classroom focus* and provided a general description of influences of the teaching-learning environment on student learning (Figure 1), as well as indicating the main features of 'teaching for understanding', mainly from the *student and researcher perspectives*, although a staff perspective was also brought in when considering the implications of the initial findings. The study also provided valuable insights into the important differences that existed across the contrasting disciplines, and also into the effects of teaching comparable subject matter in different institutions, by different members of staff.

The Icelandic study illustrated the *institutional level* of focus and offered the *teacher perspective* on 'good teaching', which agreed to a substantial extent with the idea of 'teaching for conceptual understanding' identified in the ETL project and other research in the field. But the academics put a stronger emphasis on the role of the students, who had themselves to be ready to be active in class, which was partly an attitude of mind, but also a matter of doing any necessary preparatory work. And while discussion in class, formative assessment and feedback were all considered to be important in 'good teaching', the academics explained how difficult these were to achieve with restricted funding, large classes, and a university emphasis on the importance of research publications in promotion. And their responses went a good way to helping us to realise why university teachers often seem to be unresponsive to the suggestions made by researchers about how to enhance their teaching.

The Greek case study examined the *student perspective* with a focus on the development of the *individual*. It again picked up many of the features of ‘teaching for conceptual understanding’ identified in the other studies, but also drew attention to the strong influence of emotion in learning. Students saw themselves as people who preferred to learn in their own distinctive way (‘That’s me!’) and were troubled by teaching or assessment methods that deflected them from that ideal. It was revealing to see just how strong the feelings were, both when personal understanding was prevented and when a real ‘meeting of minds’ was fostered. Hearing how differing students had experienced the same teaching-learning context, and why some had changed their approaches to learning over time, provided a reminder of the strength of individual differences in intentions and perceptions, and offers an alternative form of evidence about the directions of influence between aspects of teaching and student learning.

This emphasis on the underlying reasons why students study in different ways has important implications for teaching. It is not sufficient to teach just for the middle ground of student knowledge and engagement, but the most effective teaching will seek to be as inclusive as possible. As one physics teacher explained:

Over time, I have developed a [‘multipli-inclusive’] teaching approach which begins to satisfy simultaneously a tacit demand for content, for understanding of content, for ... applicability of that content, and yet still challenges ... those expectations by only partially fulfilling them.... [And] I have come to see a quest for personal meaning as an important catalyst for high quality learning, ... by making my teaching more an authentic conversation with students than a ‘delivery’ based on the stereotypical roles of lecturer and student. For example, I make clear my own intentions in teaching, and also ask at the beginning of every course why the students are taking the course... Even this simple practice changes the classroom climate: students recognize that their personal intentions are being taken into account, bringing into focus what it might be possible for them to achieve through learning. (Entwistle & Walker, 2001: 348-349).

In the same way, our illustration of different levels of focus and contrasting perspectives suggests the need for research into university

teaching and student learning to become ‘multipli-inclusive’, so as to provide a more complete and useful picture of influences on the quality of student learning. If only one perspective is considered, implications drawn from them will be flawed, with important differences in perspectives being invisible to the researcher. Carrying out research at multiple levels is a difficult task, particularly where conceptualisations and perspectives about the purposes of university education remain incompatible. But at least an awareness of, and openness to, what research from other perspectives has established, is surely essential in seeking to draw conclusions that can guide effective practice for both students and teaching staff.

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