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First Year Teaching-Learning Environments in Economics

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Abstract

This paper offers a description and analysis of first year teaching-learning environments in economics, thereby contributing to an increased understanding of the subject-specific nature of such environments. Evidence will be derived from two kinds of sources: qualitative and quantitative data collected in three introductory economics course units in three UK economics departments as part of the "Enhancing Teaching-Learning Environments in Undergraduate Courses" (ETL) Project as well as a review of the discipline-specific literature in economics education at university level.

The paper starts by sketching the main paradigms and approaches which exist within the discipline of economics. Both the literature and the empirical data suggest that teaching-learning environments in economics adhere to a fairly uniform format across settings. All the introductory first year modules investigated followed a content-driven lecture-tutorial approach, which was complemented by the use of textbooks and tutorial question sheets. The paper discusses the implications of such an approach for student learning. Variation between the three settings was attributed to the kinds of students which the institution and the department recruited and attempts to constructively align the environments to the students concerned, in particular to those with and without previous knowledge of economics. Inductive or deductive approaches taken to teaching are attributed to different ways of taking the importance of real-world examples and application for learning into account.

1. Introduction

This paper is one of several papers originating in the "Enhancing Teaching-Learning Environments in Undergraduate Courses" Project which explores the nature of high quality teaching and learning in a number of contrasting subject areas in UK higher education. Economics is one of these subjects and this paper reports some of the findings about teaching-learning environments in economics which the ETL project has produced up to now.

As an introduction to the field, the paper will sketch some of the main paradigms and approaches which exist within the discipline of economics, which will serve as a background for the subsequent sections. A brief overview of relevant areas of the economics in higher education

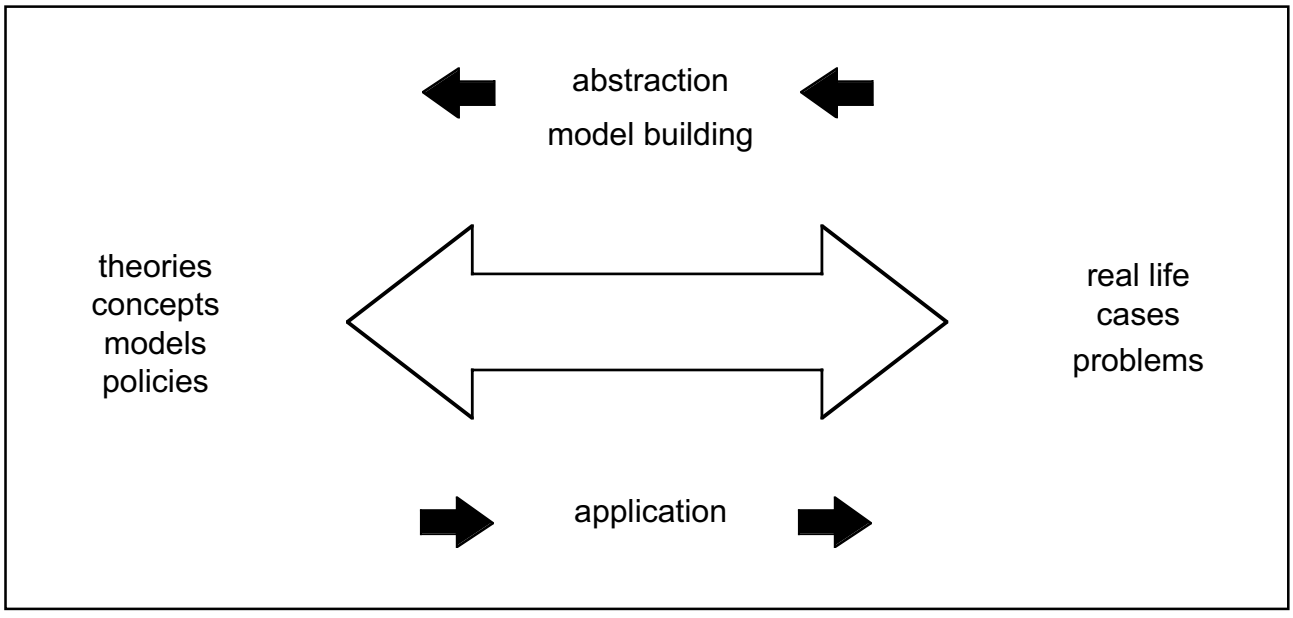
literature will highlight what the subject community regards as standard practice and what is considered to be high quality, innovative teaching and learning. The subsequent discussion of the data will be grounded in interviews which were conducted with staff and students on three first year introductory economics modules. The three modules will be described in terms of both the commonalities and the variation encountered between these settings. Key themes will be identified which are central to teaching-learning environments in economics and, it is hoped, relevant beyond the individual settings discussed in this paper.

2. Economics in UK higher education: a preliminary sketch of the discipline

The following section represents an emerging, tentative impression of economics as a discipline, written from the perspective of a non-economist. It summarises insights gained during the fieldwork, in conversations and interviews with economics lecturers and from the economics education literature. It is an attempt to make relatively general statements about the discipline of economics in order to provide a broad introduction to the background upon which the institutions and modules investigated operated.

In the UK student recruitment to economics degree courses has decreased over recent years, while business studies has become increasingly popular with students. Economics has the reputation of being a difficult subject and economics departments are struggling to find niches in the higher education market. This is probably one of the principal reasons why economics is now frequently located within larger business schools, particularly in the "new" university sector[1], although old universities still tend to have separate departments of economics. Economists working within a business school context might contribute to other courses within the school in addition to teaching on pure economics programmes. In the modularised course structure which most UK universities have adopted, some economics modules are often available to students majoring in other disciplines, such as, for instance, business studies or other social sciences.

Figure 1



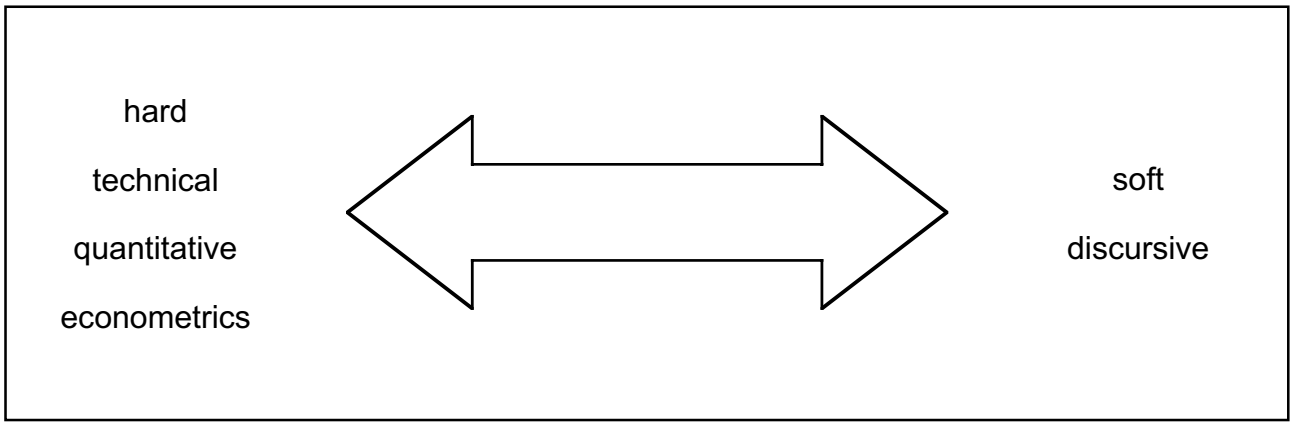
[1] In 1992 UK polytechnics became universities. Compared with "old" universities, the so-called "new universities" are known for offering more applied, vocational programmes of study and for placing somewhat less emphasis on research.

Theories and theoretical models on the one hand, and the application of theories to real-world problems and policies on the other hand, are the two poles of the continuum on which economics as a discipline and teaching-learning environments in economics are situated (see *Figure 1*). Both poles are integral aspects of economics and one cannot exist without the other, but either side of the continuum are stressed differently by individual economists and by the courses and modules which have been encountered during our investigations. Broadly speaking, economics departments tend to offer theory-based courses, whereas economics taught within a business school context is often more applied.

Economics courses do not only vary in their emphasis on theory or application, they also place different emphases on the technical aspects of the discipline. Research in economics tends to lean either towards the hard, quantitative or the soft, discursive side of the continuum depicted in *Figure 2*. Theoretical courses are likely to emphasise the technical side of the subject and the importance of quantitative data analysis. Such courses may comprise a considerable proportion of econometrics, i.e. the statistical analysis of economic data which involves the use of calculus and the manipulation of graphs.

> L: There are three models (…) of economics departments. There are the very technical departments.(…) The emphasis is on the quantitative technical skills. It goes through their research (?) to the courses that they teach and the students that come out. And then (…) there is a more balanced (?) where they are technical, but they have good analytical skills. (…) And then there is the third box (…) where economics is not under the main discipline, is not (…) in an economics department, but is primarily to support other programmes. And therefore the technical aspect of the discipline is wearing out. And this is where you find a lot of economics departments (…) in the new universities where economics has now been subsumed as part of a business school. (…) So there is the technical, very technical, the more balanced which is still quantitative, but analytical skills are as important as the problem-solving, and then there is the third category (…) which is, you try to move away all the technical aspects.
>
> (E3-sta)

Figure 2

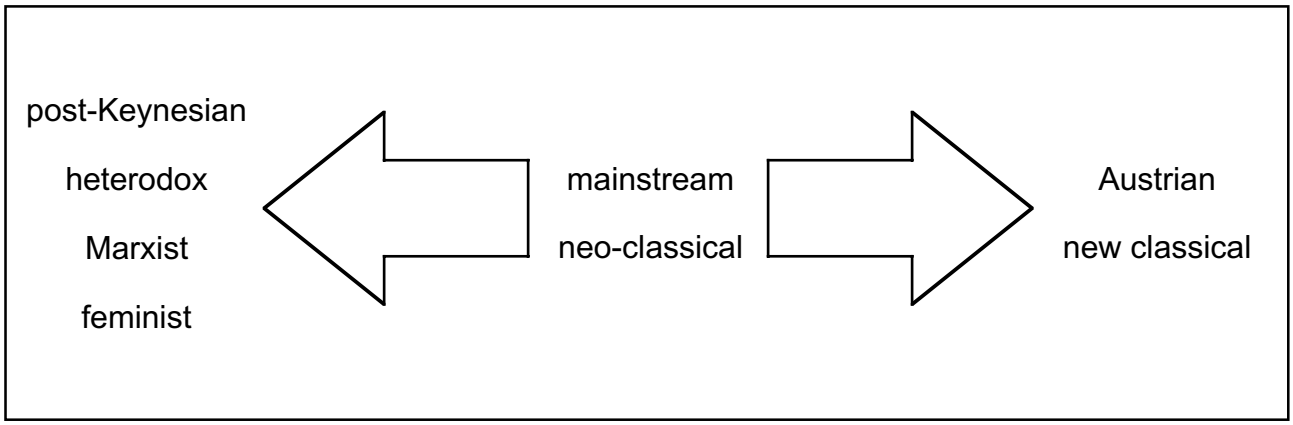


How applied a course may be without ceasing to be economics, whether and to what extent technical aspects and econometrics are and ought to be an integral part of any economics course is debated among practitioners. Facets of this debate are terms such as “theoretical underpinning”, “the new economics” and “dumbing down”, which have been employed in interviews which the ETL team have conducted with members of staff in economics departments and divisions. Within the discipline, however, prestige and power seem to lie firmly at the theoretical and technical ends of the continua.

The directions in which undergraduate courses have developed have been influenced by a variety of factors, which do not only include economists' own backgrounds, their research affiliations and the Research Assessment Exercise[2], but also student demand and attempts to align the teaching-learning environment to a rapidly changing student clientele. As will be shown below, methodological and curricular decisions are influenced both by disciplinary as well as by pedagogical considerations. It is the interaction between these two sides which makes understanding teaching-learning environments in economics particularly complex.

In addition to the aspects discussed above, economics is a discipline which is strongly characterised by different schools of thought and political agendas. John Maynard Keynes and his approach to macroeconomics developed in the 1930s had a major impact on the discipline and the main dividing line between competing schools of thought lay originally between monetarist and Keynesian approaches. Most of today's economists would probably describe their own work as broadly influenced by the work of Keynes, although differences between mainstream, conventional (neo-)classical approaches on the one hand, and Keynesian approaches on the other still appear to be important within the discipline. The majority of economists, however, seem to identify with a mainstream, neo-classical approach. Post-Keynesian, heterodox, Marxist and feminist schools of thought on the left and the Austrian new classical school of thought on the right represent the most extreme, radical ends of the continuum (see *Figure 3*), which the majority of economists would probably not ascribe to.

Figure 3



While cutting-edge thinking and current debates in economics, particularly in macroeconomics, are characterised by diversity and disagreement, the undergraduate curriculum appears to have been dominated much more by one particular viewpoint, namely mainstream neo-classical economics. From a broadly feminist perspective, Bartlett and Ferber criticise the "traditional definition of economics and the narrow methods employed ... to the virtual exclusion of other definitions and methods" (Bartlett and Ferber 1998: 110). Cole (1993), for instance, argues that a different quality of economic understanding and learning could be achieved by explicitly recognising and teaching about fundamental differences between economic schools of thought. In practice, however, many economists seem to agree that an understanding of the main principles as defined by neo-classical economics is necessary for students before moving on to alternative approaches and more critical perspectives. This is perhaps why even those courses offered by

[2] A national evaluation of the quality of research activity.

departments whose staff represent more radical viewpoints follow a relatively standard mainstream curriculum.

3. Teaching-learning environments in economics: insights from the literature

Before moving to an analysis of the data which were generated by the ETL Project, this section will briefly explore the economics education literature and the way in which it depicts teaching-learning environments. The image that emerges is one of a relatively traditional, uniform environment characterised by a core of common teaching-learning activities on the one hand, which is complemented, on the other hand, by attempts to innovate and introduce new approaches.

3.1. A uniform teaching-learning environment

> "(E)conomics instructors frequently adopt a lecture approach, emphasizing passive learning, narrow forms of evaluation, few or no writing assignments, and a reliance on textbooks (rather than real books) and routine problems set ..."
>
> (Siegfried 1998: 67).

The subtitle of a volume edited by Becker and Watts (1998) makes reference to the approach which, according to its authors, is still the most widely used in economics departments: "chalk and talk". A comparison between a survey on teaching methods in US undergraduate courses carried out in 1995 and more recent data collected in 2000 highlights the fact that, despite an increased importance of and interest in teaching economics and its scholarship, teaching is still relatively traditional and little has changed between the two surveys (Becker & Watts 2001).

> The median respondent is usually or always lecturing, with the amount of time spent lecturing in all of the courses estimated to be 83 percent. Universally, the median amount of time devoted to the use of chalkboard for writing text and graphs during the class is also 83 percent. These median values are exactly what we found in 1995.
>
> (Becker and Watts 2001: 275-277)

Despite attempts to introduce new approaches, there is some evidence in the literature that the use of lectures in also a dominant feature of economics in the UK , where lectures tend to be complemented by tutorials or seminars (Taylor 2002a, Sloman 2002, Forsythe 2002, Volpe 2002)[3] .

> (M)uch of the teaching in many higher education institutions takes the traditional form of lectures and seminars supplemented by problem sets, written assignments and limited class discussions.
>
> (Volpe 2002: 2)

Taylor notes the rigid structure of economics seminars during which content presented in lectures is reinforced by discussion of a set of prepared questions or, in the case of quantitative modules, worked examples.[4]

According to the literature, a standard approach is not only taken to teaching, but also to the selection and organisation of the curriculum. Lawson describes the first year of English and Welsh

[3] The fact that the lecture-tutorial approach to teaching has been pervasive in a large number of subjects in UK higher education is reflected in handbooks on teaching and learning, such as Fry, Ketteridge and Marshall (2003) and Brown and Atkins (1988).

[4] According to Taylor, the other principal seminar format employs student presentations to develop their "ability to synthesise viewpoints and evidence" (Taylor 2002a: 2).

economics degree programmes as a foundation year (Lawson 1989), and several American publications (contributions to Walstad and Saunders 1998, in particular Frank 1998, Boskin 1998, McConnell 1998, Davis and Erekson 1998) seem to suggest the existence of a quasi "natural" curricular progression, covering basic microeconomic and macroeconomic principles and theories first, followed by intermediate ones, as well as including quantitative methods and, in some cases, econometrics during the first two years of an undergraduate course. Only in the third year do students choose between a number of electives. [5]

> The overriding strength of the economics major is its well-defined and commonly accepted core of analytic principles. (...) Because there is widespread agreement about the structure and the content of the undergraduate curriculum, little faculty energy is dissipated in debates about course requirements.
>
> (Siegfried 1998: 66)

The influence of mainstream economics on the curriculum of degree courses - and the contested nature of this influence - has already been pointed out above. This degree of standardisation of the curriculum appears to be a distinctive feature of economics and perhaps a relatively rare one, at least among the social sciences.

The tendency to adhere to a standard curriculum and the influence of one dominant school of thought is also strongly reflected in undergraduate economics textbooks. These textbooks tend to be theory-based descriptions and discussions of the main micro and macro economic principles and the homogeneity in content coverage and the lack of radically new approaches to teaching and learning is striking (Siegfried and Walstad 1998, Walstad, Watts and Bosshardt 1998). Despite debates and disagreement within the discipline and the emergence of new research approaches and paradigms, the core material in principles of economics textbooks has not changed much and there is "a surprising degree of consensus among the textbook authors" (Walstad, Watts and Bosshardt 1998: 199). As Gärtner's overview of the volume, structure and contents of European undergraduate courses (Gärtner 2001) illustrates, even courses in different countries use some of the same recommended textbooks. Whether a standard curriculum leads to uniform textbooks, or whether the textbooks themselves have a standardising effect on curricula is unclear. It makes sense, however, to assume a considerable degree of interaction between the two.

Miller describes "the typical approach to assessment in economics" as follows:

> Students are expected to prepare answers to a series of 'shortish' conceptual questions that are subsequently discussed in tutorials in an informal way under the leadership of the tutor, with the implicit expectation that the tutor provides model answers. Midway through the module, students submit an essay from a broad list of questions. The majority of the final mark comes from an unseen examination, usually taken at the end of the module. Students are normally asked to answer three or four questions of a fairly broad nature but closely related to the material of the lecture course and the principal textbook. Typically, answers are in essay form, each of them three or four pages in length.
>
> (Miller 2002: 4-5)

For the US, a different assessment pattern emerges. Multiple-choice and true-false questions appear to be much more widely used than in the UK[6] . Short answer questions only make up a relatively small proportion of assessment, while essays and term papers feature even less

[5] Taylor (2002b) states that such a rigid structure is dated as it does not allow for choice and the flexibility which modular degrees are intended to promote.

[6] This is due to a concern about the validity and reliability of assessment tools, as expressed, for instance, in Walstad (2001), which may be more common in the US than in the UK.

frequently (Hansen 1998: 81, Walstad 2001). Despite these differences, both US and UK publications devoted to assessment urge economists to consider using a larger variety of assessment tools rather than exclusively adhering to one widely accepted standard format (Miller 2002, Walstad 2001, Taylor 2002b), reflecting the diversification of approaches to assessment in UK higher education (Brown with Bull and Pendlebury 1997, Hounsell and McCulloch 1999).

3.2 Innovative directions

Considering the uniformity of teaching-learning environments in economics, it is not surprising that the literature on teaching and learning economics in higher education tends to concentrate on making the traditional teaching-learning activities more engaging and student-centred (e.g. Sloman 2002, Taylor 2002a, Saunders and Welsh 1998) as well as on introducing non-traditional and more interactive methods of teaching economics.

One area of innovation discussed extensively in the literature is the use of information and communication technology (ICT). Economics-specific uses of the internet may include accessing up-to-date economic information, using electronic versions of textbooks and courses, and communicating with experts (Sosin 1998). Other authors mention computer-assisted assessment (Chalmers and McAusland 2002), virtual learning environments (O'Leary and Ramsden 2002) and personal response systems (Elliott 2002) as relevant for the enhancement of economics education. Some articles are devoted to *WinEcon*, an Economics software package which teaches core economic principles, theories, models and quantitative skills, developed for introductory economics modules by a consortium of UK universities (Hobbs and Judge 1995, Brooksbank *et al* 1998). Brooksbank *et al*'s survey highlights students' perception that *WinEcon* covers too much content, the need to customise the materials to specific courses and the importance of fully integrating them into the curriculum for them to be successful in supporting student learning effectively (Brooksbank *et al* 1998).

Classroom experiments, games, simulations and case studies are another area of innovation reflected in the literature (Sutcliffe 2002, Holt and McDaniel 1998, Williams and Walker 1993, DeYoung 1993)[7] . Some of these teaching-learning activities are a spin-off of research in experimental economics (Holt and McDaniel 1998, Williams and Walker 1993) which tests theory by creating laboratory situations and collecting empirical data about human behaviour within them. The main pedagogic benefits of experiments are said to lie in their potential to engage students through active participation as well as promoting an understanding of abstract economic principles as students discover them for themselves (Holt and MacDaniel 1998, Noussair and Walker 1998, Oxoby 2001, Sutcliffe 2002). Similarly, in case studies, which are often derived from news items, students must solve complex, real-world economic problems, make decisions or devise policies, thus motivating them to learn and apply theoretical concepts and analytical methods to practical situations (Volpe 2002, Buckels 1998). Problem-based learning has been suggested in the economics education literature as a way of taking this approach one step further (Forsythe 2002).

There is another body of literature which reflects upon ways in which economics can be made accessible to non-specialists, i.e. students not majoring in economics. The focus is on motivating these students to relate to what some authors characterise as a rather theoretical and potentially dry discipline and to engage with some basic economic principles by making them more interesting and personally relevant. This is done, for instance, through the use of topics and materials such as literary texts and sports, which are not inherently economic, but lend themselves

[7] One entire issue of the Journal of Economics Education (1993) is devoted to classroom experiments.

to be exploited for an introduction of basic economic theories and principles (Siegfried and Sanderson 1998, Hartley 2001, Watts 1998, Kish-Goodling 1998, Scahill 1998, Watts and Smith 1989).

In light of the extensive use of multiple choice and short answer questions for assessment purposes, some authors draw attention the importance of writing for the construction of knowledge and the development of the ability to think like an economist. In Greenlaw's research, students' examinations scores on a Principles of Macroeconomics course improved through frequent writing assignments (Greenlaw 2003). Petr (1998) argues that writing tasks can serve both as a means to learning and as a diagnostic tool which gives the instructor direct access to students' understanding as it develops over time, and suggests using a variety of writing tasks to develop students' "economic literacy". Hansen (1998) advocates an approach which integrates writing assignments of progressive complexity with the acquisition of key transferable skills. The writing assignments mentioned by these authors include, for instance, précis, summaries, memos, analyses, and essays, annotated economics issues notebooks of news clippings and small group collaborative project reports.

4. First year teaching-learning environments in economics: insights from the data

Informed by the economics education literature discussed above, this section will explore prominent features of the settings under investigation and highlight issues pertaining to the data which are of potential relevance for understanding first year teaching-learning environments in economics as well as teaching and learning in the discipline as a whole. The pedagogical implications of the issues raised both by the empirical data and the literature will be examined. The focus will be on the nature and quality of student learning in economics and ways in which it could be enhanced. The data which will be discussed in the following sections have mainly been taken from semi-structured interviews which were conducted with students and staff from the three first year economics modules investigated by ETL. These interviews are complemented by insights generated through informal contact and conversations during fieldwork as well as inventory data. Occasionally and where appropriate, data gathered in final year modules at the same universities provide additional perspectives.

4.1. The courses and course units under investigation

E1F

E1 is a new university with a division of economics which is located in a business school and economics staff teach on both specialist economics and business programmes. Degree programmes in economics are currently affected by low student recruitment. E1F is a small introductory microeconomics module which is running over 2 semesters and is geared at students who are majoring in economics. There were 17 students in 2001/2 and 8-13 students in 2002/3. Principles of microeconomics are introduced in the first semester and then applied in the second semester. A-level economics is not a pre-requisite and the module comprises students with and without previous knowledge of economics. They are predominantly from non-traditional backgrounds and include school leavers, mature students, international students and students from ethnic minorities.

E2F

E2 is a new university whose department of economics is part of a business school. The institution has considerable expertise in flexible learning and the economics department has successfully

developed distance learning degrees and top-up degrees for people working in the financial services industry. Some of its degree courses are available overseas. Its home students come predominantly from non-traditional backgrounds. E2F is a large introductory economics module with an intake of well over 300 students. It runs in semester 1 and is repeated in semester 2, being available in full-time and part-time mode. It is a compulsory core module as well as a popular option on a wide range of undergraduate programmes across the business school, in engineering, sociology and psychology. The module introduces the main principles of micro and macroeconomics, while trying to reduce the technical content as much as possible. It is geared towards non-specialists, although it also comprises a small number of students majoring in economics. Previous knowledge of economics is not a prerequisite.

E3F

E3 is an old, established university with a high research profile whose economics department offers traditional economics programmes, catering for large numbers of students. Recruitment to the economics degree programmes at E1 is buoyant. Students tend to be white, middle class students of school leaving age with high A-level scores. Previous knowledge of economics is not a requirement for economics degree courses, but all students must have at least a GCSE in mathematics. The majority of students on E3F major in economics, but a minority are on combined programmes or take the module as an option on another degree programme. The module provides an introduction to economics, covering microeconomics in semester 1 and macroeconomics in semester 2. There are over 200 students on the module.

4.3. Commonality and variation in teaching-learning environments in economics

The following sections will explore some of the key themes which were generated by the data collected in the three settings described above. This will predominantly be done through the lens of Biggs' notion of constructive alignment. Biggs conceptualises a teaching-learning environment as a system in which all elements have to work in harmony in order to support high quality learning (Biggs 1999, 1996). The main elements which Biggs identifies in his model are curriculum objectives, teaching-learning activities and assessment tasks, and the subsequent sections will discuss some of these aspects.

The literature led us to expect considerable commonality in the teaching and learning of economics in higher education. This was partially confirmed by the data and is the reason for examining first those aspects of the teaching-learning environments investigated which can be characterised by such commonality. The discussion will then move on to those areas where variation between the environments was much more apparent. It must be noted, however, that a classification in terms of commonality and variation is crude and will, by its nature, simplify a much more complex situation. This is why a discussion of the ways in which the settings differ will also be included in the sections devoted to commonality, and commonalities will equally feature in the sections devoted to variation.

Heavy reliance on a content-driven[8] lecture-tutorial approach is the main commonality between the three settings E1F, E2F and E3F. Teaching-learning activities consist of lectures complemented by small group teaching in tutorials/seminars, during which so-called tutorial question sheets are used. Introductory economics textbooks provide some or a large proportion of the reading material which students are referred to in lectures and tutorials. The following sections will discuss each of

[8] The term "content-driven" was used by Dai Hounsell in discussion and has subsequently been integrated into this paper as it captures the emphasis which is placed on content coverage.

these key components in more depth and will focus on those issues arising from such an approach which have an impact on the quality of student learning.

4.3.1. Lectures: keeping pace

Lectures, complemented by small group teaching in seminars/tutorials, were the common form of delivery in all three first year modules. Both E2F and E3F delivered lectures to approximately 200 students at a time[9]. Although the two modules differed in many other respects, virtually all E2F and E3F interviews contained considerable reference to the brisk pace of the lectures and the large amount of information students had to take in. The following two extracts convey the impression of an unrelenting sequence of principles, bullet points and, in the case of E3F, graphs.

> S1: I did economics for 'A' Level. I still feel like I'm in at the deep end. (…) You go very, very quickly through the lectures and you spent most of your time at lectures trying to get everything down without actually stopping and thinking about what it is. You never really stop, trying to understand it, you (are) just concentrating on finishing that sentence before he wipes it off the board.
>
> NR: So is it the quantity of material which is quite a lot?
>
> S1 It is quite a lot, and a lot of it is complicated and you actually need to stop and think about it before you can understand it and they don't give you that time to stop and think, you go straight on to the next one, and when you go to read it back over again, you can't remember which bit was which.
>
> (E2F-stu2)
>
> S3: Fifty five slides in one lecture of 50 minutes, I just thought that was a bit too much. It got a bit crazy, there was just too much trying to be squeezed in I think. Some of it didn't need to be there.
>
> S1: I think in almost all of this term as well, (they) try to tell us so much in one lecture, basically hardly (have?) time to get to all the stuff they want to say, so they almost rush you through it the whole 50 – 55 minutes to try and get it all in there. Whereas in my other lectures that's not really the case, but definitely this module more than the others. They're really having to just rush through it because they seem to have so much to get through.
>
> NR: And what effect does it have on you?
>
> S1: It means it's harder to take it in really, if you are rushing from one idea to another.
>
> S2 It's more a case of writing it down and trying to come back and see what it actually said later, it's hard to write and also listen and understand the concept and think how you are going to apply it.
>
> (E3F-stu5)

Keeping up with such a brisk pace caused problems for some students, particularly for those without any previous knowledge of economics. For students on E2F, which aimed to provide an overview of economics for students majoring in other disciplines, the brisk pace was coupled with a perceived lack of depth and the impression of "skimming the surface" of economics.

> S: [The lecture] needs to slow down a little bit.
>
> S: And go into a little bit more depth. The notes we get just glaze the surface.
>
> NR: Is it that which makes it difficult?
>
> S: Yes. I was just looking through my notes today, to do an essay this morning and I couldn't work out what was going on. I had no idea and I had just copied them down from the overhead.

[9] Siegfried (1998) regards large classes as one possible reason for the standard lecturing approach to teaching economics.

NR: What kind of things do you mean when you say in depth? Would it be more examples?

S: More information

S: Instead of writing all the time. I've got a big bugbear about that.

(E2F-stu5)

During fast paced lectures students tended to focus on note-taking instead of concentrating on understanding the information conveyed. Copying graphs accurately within a very short time span was described as particularly difficult. As a consequence, the interviewees expressed a need for more time to write, to process and understand the material as well as forming an opinion about it. In the course of the interviews they talked about their preference for lectures during which the presentation of new information on overheads or Powerpoint slides is complemented by background information, detailed explanation and examples, including handouts or the availability of lecture notes within a Virtual Learning Environment (VLE)[10]. If students are confronted with a fast pace and a very full curriculum that cannot be coped with and if they are under the impression that in-depth understanding is neither required nor encouraged, there is a danger that these perceptions might lead them to abandon a deep approach to learning and to rely on surface strategies.

There was also some evidence that the large number of economic concepts which introductory lectures tended to cover makes it difficult for students to make connections and develop an integrative understanding of the subject. When asked which concepts, topics or ideas were of particular importance for their respective modules, there was considerable variation and little overlap between the aspects identified by different individuals and groups of students talking about the same module. This might indicate that, metaphorically speaking, students may have found it difficult to "see the wood for the trees", i.e. to make connections and distinguish core ideas from less important ones. In introductory modules with a very full curriculum everything can appear to be of equal importance.

NR: What are the most important things you have learnt on the micro module so far (…)?

S: How do you mean? I don't know what you mean.

NR: (…) If you go through the module and you think: what have I actually learnt so far? What are the kinds of things you have learnt?

S: Supply and demand I think (…)

(…)

S: Monopoly we have just been doing, God, I can't remember anything else (laughs). Oligopoly.

(…)

S: (…) What else? Oh, start again, consumer choice, decisions.

(…)

S: I can remember supply and demand, I can remember monopoly because we have just done that. And I have been reading the oli-, whatever it is, myself.

NR: If there are any particular economic concepts that are important to that module or have been so far, would that be the ones you have just mentioned?

S: Yeah, I would think so.

NR: I'd like to focus on two concepts and one of them is .. elasticity.

S: Oh yeah, we have done that (laughs), I remember now.

(E1F-stuD)

[10] Students admit, however, that attendance at lectures is seen as much less of a necessity if very detailed lecture notes are available on the web.

Economics is a highly conceptual discipline and the perceived necessity to cover a large number of economic concepts within an introductory module might risk leading to a lecturing approach which focuses on coverage and information transmission to the detriment of in-depth understanding.

The issues discussed above which are raised repeatedly both by E2F and E3F students are not reflected in the same way in E1F interviews, although the approach taken in E1F is still "chalk and talk".

> There wasn't really a lot of interaction, it's more, we'd have a question or some information we had to read through it and then he'd go through it on the board and we'd just add our points, we never really had (a) big discussion.
>
> (E1F-stu1)

The fact that even with a very small group of students a traditional lecture approach is taken throughout rather than using more interactive and discursive formats of small group learning highlights the normative power of the standard teaching-learning environment in economics. Delivering a lecture to a small group, however, is likely to be very different to lecturing a large group of students.

> S5: Getting us involved, like asking us, not just sitting there reading out the lecture, asking us questions. Getting us to talk as well.
>
> NR: Has (there?) been quite a lot of discussion between yourselves? How does that work?
>
> [Pause]
>
> S3: When he's standing there, he'll ask us and stuff like that.
>
> S5: (With it being?) a small class as well, you can talk to each other better and things instead of being in a big lecture theatre and they're just reading out to you all the time.
>
> NR: So (…) do I understand that correctly, (…), it's not so much discussion between yourselves as students, but he would ask you and see whether you challenge your ideas and see whether you understood? Or is it more between yourselves, sort of discussing things between yourselves as students? Or both?
>
> S5: There's only (been) a few times where we've discussed it between ourselves and had a debate about it. Once or twice
>
> S4: Yeah, it was about that legalisation of prostitution (..)
>
> S5: Most of the time it's talking it over with him.
>
> (E1F-stu2)

Smaller groups make it much easier for the lecturer to be flexible, to attend to individuals and to constructively align the teaching-learning environment to the students. This is probably why E1F students did not bring up the same problems as students on E2F and E3F.

4.3.2. Seminars/tutorials: revision of lectures and development through questions

Virtually all student interviewees agreed on the importance of seminars/tutorials[11] for learning, provided they were not conducted like mini-lectures, and as a result interviewees from different settings suggested holding more frequent seminar sessions. In the three teaching-learning environments investigated seminars appeared to fulfil two major functions. On the one hand, they

[11] Both terms are used interchangeably to refer to small group teaching.

had the explicit purpose of taking content introduced in lectures further in a variety of ways. This was predominantly done through "tutorial question sheets" which contain problems, scenarios or cases requiring students to work through and apply the concepts which were introduced in the relevant lecture(s) in order to develop a deeper understanding.

S: Normally groups and then we discuss it with the lecturer.

R: Right. What tends to be on the sheets?

R: Problems diagrams or questions.

S: Questions.

R: Right, and you've got to thrash them out. And then you go through that with the tutor as well.

S: It's not just like questions out of a book or about the lecture. It's like stuff that we don't know as well so we have to think. Like scenarios and stuff like that

(E2F-stu2)

Tutorial questions appeared to be used in all the setting investigated, including first year as well as final year modules. They were found in module handbooks, on handouts produced for tutorials as well as posted in VLEs. Undergraduate textbooks equally contain the same types of questions. In most cases, the students were asked to prepare their answers to tutorial questions in their own time (which some, but not all of them did), or alternatively the questions were tackled for the first time during the seminar, possibly in small groups. Individual students could be asked to present their answers to the questions on the board, with the tutor discussing them and going over possible correct answers towards the end.

I Right, so you got a question and then, what would you do then? Think about it, sit down and write something? Or listen to him answering the question?

(…)

S Just discuss it with people sat around you.

(…)

S Then he'd put it on the whiteboard, sort of added as you wanted really.

I And then, what would he do with that?

S Well, give us a set of notes (…), answer to that question and then move on to the next.

S1 We'd generally get a case study (…) which would be a real life situation, then we'd go through it and apply the theory to it and then we'd make notes from that.

(…)

S1 (…) We all discussed the theory more or less.

(…)

S Which we learnt in previous lectures.

(…)

S2 Basically just (come with?) the new subjects, (?) it onto the board, drew diagrams and we'd discuss it and we'd write notes at the same time. .. And he'd just explain himself and if we didn't write good enough notes, we wouldn't understand it.

(E1F-stu1)

The other purpose of seminars was to go over lecture material by revising it and providing additional explanation and depth. This is evidently linked to what has been said above about the nature of lectures: if lectures do not provide the explanation and depth which is necessary to achieve understanding, the seminars have to compensate for this lack. So although the declared function of seminars may be to work through tutorial questions, a considerable proportion of

seminar time seems to have been spent going over lectures and students without previous knowledge of economics in particular highlighted the importance of this approach for understanding.

S: They go over it more and explain it more than they do in the lectures. In the lectures she doesn't explain what she's talking about. In the tutorial we go over what she's been talking about.

NR: So do the tutorials do the same thing again, in many ways?

S: Not always.

S: You learn it the second time round.

NR: What's different? (…)

S: In the lecture she's just putting up slides and stuff and you're just sitting writing and you can't really listen or take it in. In the tutorial the following week they go over it again and you can actually sit and listen to what's going on and learn it.

NR: Is it because you've got the opportunity to ask questions?

S: I think he goes over it in more detail.

NR: (…) What is it in the tutorials that helps you to understand?

S: I think it's just the fact that it's the second time round and you understand because you've heard it before.

S: In the lecture we only copy notes at the same time as the tutor is explaining and we haven't had time to listen. If we listen, we haven't time to copy notes.

NR: So it doesn't give you time to think really?

S: Yes.

NR: So in the tutorial do you get more thinking time? Again, I'm not quite sure I understand what he does in more depth. Does he give you more examples, or does he draw things on the board – what is it?

S: He does more examples, real life examples. It's just the more examples they give us the more chance we have of understanding it.

(E2F-stu7)

The students appreciated a tutor's flexibility in being able to go over lecture content if students indicated that something has not been understood. Which approach is taken can be regarded as a question of constructively aligning the seminars to the students who are in them (see below for a more detailed discussion of constructive alignment to students).

Another main issue surrounding seminars is the relationship between the material which the lectures introduce and the way in which this is picked up in the seminars. Making sure that lectures and seminars mesh can be regarded as one aspect of constructive alignment and this can become a major challenge if, for instance, a seminar group combines students with and without previous knowledge of economics (as in E1F and, occasionally, in E2F) or if a 1-hour seminar has to be related to the material covered in 4 hours of lectures (as in E3F).

S2: Questions aren't always necessarily on what you covered in the lectures or they might (be?) on a small, small bit of, say, ten minutes of work that you've done say in the last, say, four hours of lectures -

S1: Because there's the schedules as well, we're sometimes up to about three weeks out, I'd say between what we're covering in tutorials and lectures, so I'm not sure. Maybe if the lecture material was closer to the tutorial, that would reinforce it.

(E3F-stu6)

Practices between different tutors varied considerably in relation to groupwork, interaction, discussion and feedback, all of which the students found beneficial for learning, but which were not common elements in all seminars. Differences between practices in seminars can be seen as attempts to align the environment to students, e.g. to those with and without previous knowledge of economics. However, variation could also be due to individual tutors' teaching styles or to differing levels of tutoring experience. Leaders of large introductory modules were faced with the dilemma of letting tutors get on with the approach they considered appropriate (as in E3F) or of prescribing specific aspects of practice, such as centrally setting tutorial questions for all groups (as in E2F).

4.3.3. Textbooks: inaccessible language

When asked what was necessary to do well on the modules under consideration, many interviewees mentioned the importance of reading.

> NR: What do you think is necessary to do well in this module?
>
> S: Probably just reading the books.
>
> (…)
>
> S: Understanding the material.
>
> NR: Understanding what kind of material?
>
> S: The stuff that you've been taught, like your notes
>
> NR: What she's covering in the lectures, and reading the books. Which books are you reading?
>
> S: Course texts
>
> NR: I think I've just seen them and there's a book by Sloman, is that the one?
>
> S: Yes
>
> NR: So you think if you read that you would be doing reasonably well?
>
> S: Yes.
>
> S: As long as you understand it.
>
> NR: What do you do in order to understand it? Is it easy to understand or difficult to understand?
>
> S: Not always. I tend to go over it a few times.
>
> (E2F-stu7)

On all three modules, set textbooks were used. E3F recommended more than one textbook and the module handbook explicitly referred students to relevant sections of two books relating to each topic covered by lectures. Students in E1F used one textbook, complemented by a workbook by the same authors for seminars. E2F produced their own flexible learning materials which all students were able to purchase and which, in line with the overall philosophy, tried to make the material as accessible to non-economists as possible by avoiding technical language, calculations and graphs. In addition to the flexible learning materials, one textbook provided supplementary background reading.

In many interviews the students talked about the relationship between reading and learning. However, although reading and working through the textbooks was seen as vital for understanding, the nature of the textbooks was sometimes described as hindering the achievement of understanding. This was due to the language and jargon employed by textbook writers as well as the way in which the information was presented. This particularly affected students without any previous knowledge of economics.

S: I was reading the economics books last night and I had to read it five times for it to sink in and then you've got to try really hard to try and remember it. I think it's written in dull language.

S: There isn't anything that jumps out to make you remember some parts of it because I was reading it as well last night and I sat up till 1 am sitting reading and I thought I've got nothing from this because the language that they're using in it and then they'll abbreviate things that they don't tell you they've abbreviated and so you just don't understand.

NR: Like what for instance?

S: When they're talking about differences in graphs, they'll put in wee letters but the graph can be 10 pages behind you and you've not remembered the graph so you don't know what they're talking about so you have to go back and read over and over and over again.

NR: What is it about the language?

S: You need a dictionary next to you.

NR: What is it? Is it lots of terms?

S: In some cases they'll explain them but in other cases you've got to go to a dictionary to see what they're talking about because you don't have a clue

S: It's like they've written it not caring if we're going to understand it, or not. They've not changed it to make it easier for us to learn.

(E2F-stu4)

4.3.4. Choice: conspicuous by its absence?

One aspect of teaching-learning environments in economics which has been brought out by the quantitative data collected about the modules is students' perceptions of choice. The *Experiences of Teaching and Learning Questionnaire* (*ETLQ*) was designed to obtain quantitative data on students' approaches to studying on the modules, their perceptions of the teaching-learning environments, the demands made by the modules and the knowledge and skills gained on the modules. The questions about choice were included in the *ETLQ* since the availability of choice has been identified as one aspect within teaching-learning environments that tends to encourage a deep approach (Entwistle and Ramsden 1983). The scale dealing with choice has produced some potentially interesting results which will need to be explored further. In all three modules under investigation, the choice scale produced the lowest score compared to all other perception scales. In E3F the mean and median score for choice was below the midpoint of the scale. The conclusions drawn from this observation can only be very tentative as sample sizes and return rates for E1F, E2F and E3F have been different and the analysis is only in the initial stages. It is hypothesised, however, that the absence of choice may be a feature of teaching-learning environments in economics. Because of their relatively uniform nature and the standard curriculum, there may simply be no room for choice within these environments.

4.3.5. Assessment: contextual variation and disciplinary commonality

Assessment in the three settings was not quite as uniform as the literature might suggest. Assessment patterns appeared to be predominantly determined by the department or the institution, with one module being assessed entirely by examination, another one entirely by continuous assessment, while the third module combined both modes of assessment. The actual assessment tasks, on the other hand, showed more commonality across the settings. All modules included assessment tasks using questions requiring short prose answers as well as one essay assignment.

On E2F students are assessed continuously during the semester by submitting 5 different, equally weighted assessments, three of which are open-book assignments completed in students' own

time, while two are taken as tests during timetabled sessions of the module. This assessment scheme has been designed with the high failure rate in mind which the module used to attract. The assessment instruments are a combination of very different tasks, including one essay, true-false questions and questions requiring short prose answers. E3F, in contrast, assesses students by 100% examination. The examination consists of several questions requiring short prose answers, and an identical format is used for a test carried out half-way through the module which is designed to give students formative feedback on their understanding of the first half of the module. A formative essay whose mark does not count towards the final mark received for the module is an additional component of the assessment scheme. On E1F students are assessed by a combination of coursework and examination. One essay for which students have to interpret authentic economic data attracts 50% of their marks, while an examination requiring short prose answers attracts the remaining 50%.

4.3.6. Constructive alignment to students

One of the main challenges within first year teaching-learning environments in economics is constructively aligning such environments to the students who are part of them. There was considerable evidence that this is an issue both for students and for staff. The economics data illustrate that aligning the environment to the very diverse groups of students which contemporary UK higher education comprises is crucial to the quality of teaching-learning environments in economics, and this has also been shown for other subjects (Hounsell and McCune 2002). The ETL Project's interpretation of Biggs' notion of constructive alignment therefore includes alignment to students and within our research specific emphasis has been placed on investigating the ways in which this is achieved in the disciplines and the individual course settings concerned. The following two extracts illustrate our departmental partners' concern for alignment to students of introductory economics modules.

> L: The main issue (…), certainly over the last 2 or 3 years, has been the variable ability and possibly motivation of students. (…) We have always taken students with non-traditional A-level backgrounds, but we are taking a student increasingly for the last 2 or 3 years that had fairly modest academic profiles upon entering.
>
> (E1F-sta1)

> L: The mathematicians and scientists have difficulty actually looking at the real world and constructing a logical argument in essays. The other extreme, you get the politicians, the historians, who are not very good with maths. So you've got different skilled bases there.
>
> (E1F-sta1)

It is suggested that the main variation between the three modules can be interpreted as representing different ways of constructively aligning the respective teaching-learning environments to students. The following sections will discuss two specific areas in which constructive alignment to students appeared to be an issue.

4.3.6.1 Constructive alignment to students' previous knowledge

In the first year economics modules investigated, constructive alignment to students can be related very specifically to the way in which students with and without previous knowledge of economics are accommodated within the respective teaching-learning environments. All three modules comprised students who had previous knowledge of economics, e.g. A-level, Higher, HND or access courses, as well as students who did not. The perceived difference between students with and without knowledge of economics gained through previous study was brought up in virtually all the interviews with students and staff and is a major issue for first year teaching-learning environments in economics.

L: As an introductory core module we have a very wide range of ability and those people who've done no economics and no maths beyond the age of 16, whereas others have come in (with a) fairly high knowledge of economics and maths at A-level. And between those two extremes there is a whole range of different combinations and backgrounds. Including some people (who) are doing economics as a main degree (…), some people are doing one module of economics and this is the module to take. So there is a very wide ability range, a wide range of motivations and in the lecture hall we've got 200+ and you've got to hit all of those (basis?) and offer something for everyone in a sense.

(E3F-sta1)

The students with and without previous knowledge varied considerably in their perceptions of the modules and interviewees from both groups seemed to agree that a background in economics made taking the modules much easier and decreased the workload considerably. Students with previous knowledge of economics tended to be familiar with a large proportion of the learning content, particularly in microeconomics, and therefore did not need to put much effort into understanding. Students without previous knowledge on the other hand, were more likely to struggle to understand and had much more work to do in order to keep up.

MS: I did just choose it as an optional module, thinking it would be quite interesting. To a large extent it has been interesting, but I have found it difficult. It is a lot of work, for one module, especially if you are not doing Economics as a main subject. I think one of (the) things that it says it doesn't assume A-level Economics, but I have looked at the A-level syllabus and quite a lot does come up in this, and it would have been very useful if I had done it.

(E3F-stu1)

Similar to previous knowledge of economics, some students on E3F mention the impact which an A-level in mathematics has had on their understanding. Students without a background in mathematics feel equally disadvantaged to students without previous knowledge of economics.

The fact that first year modules comprise a mixture of students with and without prior knowledge of economics makes it difficult for staff to constructively align the teaching-learning environment to the students as there is so much variation between students in their levels of understanding.

I You think the heterogeneity in terms of their, well, general academic experience or ability or whatever you want to call (it) -

L Yes.

I - that's the main distinguishing feature in a way between the students?

L It's the main challenge for our teaching and their learning. If (…) we pitch it too low, we demotivate the students that already have quite a good economics background. If we pitch it too high, we demotivate those that haven't. It's a real .. battle, constantly.

(E1F-sta1)

Since the modules under investigation contained different proportions of students with and without economics, aligning the environment to the majority seemed to be the most common strategy taken, although this clearly had implications for the minority.

L: Some students have come in highly trained in some cases, with very good grades and they can be very critical if they're not getting what they think is good enough. It keeps you on your toes. I'm all for that. I do actually like talking to the students and finding out whether they've done this before and if so what sort of details did you do and that sort of thing. The other end of the degree, the other end of the year so to speak, they've got to leave 1st year well equipped for 2nd year, 2nd year single honours economics. So there is a relatively high standard that's got to be achieved. Now that is a problem for those who don't want to go on with economics again because it does require a depth of analysis maybe they'll never ever see again, and some of them actually complain a bit.

(E1F-sta1)

The quotation illustrates that E3F was geared towards students majoring in economics and predominantly aligned to students with existing knowledge[12] . As a consequence, students on E3F were critical of the claims that no previous knowledge is required to take the module. In contrast, E1F and E2F staff were trying to tailor their modules to students who had not studied economics before.

> L: I would say 50% of them have A-level Economics recently and 50% approximately do not and perhaps unfortunately for those that HAVE, we start from quite a fundamental level.
>
> I Because you have to gear it towards the other ones.
>
> L Yeah, it's that mixed background that is the main issue there. So I would imagine if you got A-level grade C, you will be particularly au fait with most of what we are doing. What I was trying to encourage those students (to do) is extra reading. I always try to encourage them to do that and to concentrate on the areas where they are not familiar. So they may be doing accounting or language or law that they may not have done before or whatever they are doing in their elective.
>
> (E1F-sta1)

> L: With the exception of the 20 or so who are actually doing specific courses [=students majoring in economics], –
>
> (…)
>
> L: - most of them don't want economics more than (…) because they have to have it as part of their business studies degree or (law?) degree or whatever. (…) To get a general level of understanding, not (to) be too theoretical, not to make it too complicated, but to provide our students [=students majoring in economics] with enough of the necessary knowledge I think and understanding to take them into the next stage. But then, (….) there is a vast majority of them (who) are not needing anything like the kind of detail (…)
>
> NR: Much more geared toward the bulk -
>
> L: Much more geared towards the bulk.
>
> (E2F-sta1)

This is why E2F students with previous knowledge of economics, who had expected to go beyond what they already knew, were surprised about the lack of in-depth study which E2F provided for them.

> S: We've been doing on employment and inflation, we've just touched on inflation and touched on the question and that was it done whereas with the HND you went right into it. You went into every fact and every side of the whole area of employment or inflation and then you were examined on that but the exam was a big exam, it was an hour or hour and a half and you had to get a lot into that whereas this is just a simple question on one area and you just answer it and you've got time to resource it for yourself. You're covering what you've been taught, you're not having to look further into it. With the HND you were expected to know, look across the board, and know every point in the book.
>
> (E2F-stu6)

There is considerable evidence in the interviews that students with previous knowlege of economics perceive the introductory modules as predominantly providing revision, particularly in microeconomics.

> S: Because I have done economics at A-level, so I am finding the work easier than (?). (…) . It's really hard to concentrate in lectures because I know most of the stuff in micro. (…) If you know the stuff as well, (it) makes you feel a bit lazy, (you) don't concentrate on lectures then.
>
> (E1F-stuH)

[12] However, previous knowledge of economics was not a prerequisite for E3F.

S Well, I did economics at A-level and I mean, the content there has been quite, a fair amount of overlapping with the micro.

S yeah

(…)

S: I studied economics as well so everything has been similar as it's only the first year. Economics. So everything I have done this year I have done before.

(E1F-stu1)

S: Well, I passed with no revising at all.

(...)

S: (…) The first three questions you had to answer (…) were pretty much what we studied at University here where, which I did poorly in. Yet the last essay question, I simply used all my A level and got 26 out of thirty or something, just by using A-levels.

(E3F-stu3)

The perception of the environment predominantly providing revision might well have had a negative impact on student learning. One interviewee pointed out that having a prior understanding of economics might involve having to rethink something one thought one already knew. If, however, everything appears familiar already, the environment is unlikely to provide sufficient stimuli for students to review and revise their existing knowlege. Potential misconceptions might therefore prevail rather than being replaced by more sophisticated conceptualisations.

Since higher education teaching-learning environments in economics appear to be relatively uniform, there is a likelihood that environments in secondary education are also relatively similar. It is impossible to assess the situation on the basis of ETL data alone as the "new" 16-19 A-level economics seems to be moving away from presenting economics as a sequence of economic concepts supported by brief illustrations (McCormick and Vidler 1994, Vidler 1993). In the interviews students did not only talk about similarities, but also about the perceived differences between teaching and learning economics in secondary and higher education. While some students only saw this difference as a question of detail, other students, particularly those in E3F, talk about the increased level of uncertainty, the importance of different schools of thoughts and the fact that the reasoning behind things was explored and explained, rather than facts being regurgitated. A-level economics, on the other hand, was said to be slower paced and to include more real-life application as well as less theory and mathematics.

S1: I'd say like the Phillips Curve in macro and deriving like aggregate demand from ISLM, we had done at A-level, but just drawing it, taking it as given, but we're shown how to draw it, (..) that (is) interesting.

(E3F-stu3)

MS: I think it is more technical, and analytical, the reasons why things happen, why that happens and has an effect, and yet there is more maths as well.

(E3F-stu4)

Even if there are differences as well as similarities between teaching-learning environments in higher and secondary education, it may be the content-driven nature and the standard sequence of neo-classical concepts which produce an overall appearance of sameness which might make differences less noticeable. This might give rise to perceptions of the environment as mainly providing revision among those students who have prior knowledge of economics. These perceptions might risk leading to a fossilisation of students' existing conceptions, including

potential misconceptions, and prevent reconceptualisation. Whether this is definitely the case needs to be explored further.

There were instances in the data which illustrate the way in which constructive alignment to students could be achieved, even within the confines of the standard teaching-learning environment in economics. The example quoted below relates to the way in which the seminar system allowed the flexibly to either concentrating on providing reassurance and revision of lecture material for students without previous knowledge or by using tutorial questions to challenge students with previous knowledge of economics.

L: Now we divide the tutorials up so that we have some groups that all students have some A-level background, they have some prior access to economics, and others that have no A-level background. So you understand the tutorials are deliberately designed so that we capture different abilities ranges, those with prior knowledge and those without prior knowledge. Those without prior knowledge they drive the tutorial - what do you not understand that you've done in lectures recently, what do you want me to go through. What is very teacher orientated, get them to understand. Towards the end of the year only can you get them to apply them, about this time of the year actually, you can't really discriminate between one student and another, because they've gone through 2 terms of economics now. The other ones I'm much harder one - you should have done this, you should know the answer to this, why don't you know the answer to this, show me, get up there and show me - in a very light hearted way, one emphasises the point that you ought to know the basics. So the vocabulary particularly for these guys, ought to be there. So, different tutorial sets, and a different treatment in both, I'm much more demanding on one than the other at the beginning. By the end of the year they are more or less the same, I'm giving them the same tasks and expecting to see the same outcome.

NR: So you actually give them different tasks, because I see on the module handbook -

L: Yeah, the questions are the same, but I'll be very demanding in one case but very helping in the other, I won't make them stand up and expose their own ignorance. I'll ask them, what is it that you don't understand, and they'll say something, then I'll go through it with them. Then you ask them, what does that mean, what does the other mean, now I've just demonstrated what are the implications of that and they can usually follow that then. But for the first group, no, I just get them to do a drawing and get somebody else in the group to then comment. So it's very hands on, the tutorials, particularly in the first term, very hands on. You treat the students as you find them. Apart from that as you know there are all sorts of exercises in the handbook that are set out. And in fact sometimes, particularly the A-level ones in the first term I'll ignore those and through difficult stuff at them, because I want it to be stimulating into actually challenging some stuff, particularly early on, they've seen it all before. So you've really got to make them think that I'm going to throw something at you that you that you don't know so that they don't get too casual, that's very important.

(E3F-sta1)

MS: We can ask questions, and talk about things that we don't understand.

FS: That (is) like a class at school where you have a blackboard and stuff on the board, as opposed to a lecture.

(…)

MS: Whereas here you have got a difference between the lectures and the tutorials, the lecture's where you are taught, and then sort of review, revise and ask questions in the tutorials.

FS: In this one everyone contributes to the answers.

MS: People go to the board and draw graphs.

MS: You just ask like in a normal class, talk about problems.

NR: What problems?

MS: Any problems that we have with the subject, and then he says 'You don't know?', so he goes to the board and tries to draw it if he can (?)

MS: The good thing about his tutorials is, I think, it is he makes everyone get involved, like he goes

round and says 'you now'. You have to make an effort to try to answer. (…)

FS: There are tutorials where you can sit and not say a word.

FS: He says to you 'Do you have any problems you want me to go over?' in the beginning. He has his own thing as well.

FS: He usually starts with something he has decided he is going to go over, but it's stuff we have done in lectures, and he goes over that.

MS: The stuff he does is the most difficult stuff from the lectures.

(…)

MS: He will have an idea of what we might be struggling with, but at the same time, if we come with something different, he is more than willing to say 'If you don't understand that, we will review that and have a look at it again'.

MS: Plus the emphasis is on subjects which are going to be very important for the final exam.

FS: And also he really wants you to understand, some people just kind of explain it and don't really care if you understand it or not, whereas he wants you to say that you don't understand, if you don't.

NR: So how does he know that you have understood?

MS: He will ask us.

FS: He will say like, and I think he can tell as well because of the way we respond.

NR: So you feel quite supported in the way that you don't feel you have to bluff or pretend that you have understood? You feel it is quite an open atmosphere where you can talk about problems and questions?

MS: Exactly, because there are times when we don't want to ask questions, but here he makes us ask questions.

MS: It will quite often happen that he will say, we will review something, and he will say 'Do you understand it?' and then you can say 'No, I am still not quite grasping it' and he will say 'Okay, we will have a look at (it) again' until the penny finally drops and everyone grasps it.

(E3F-stu7)

This example shows that while constructive alignment to different levels of previous knowledge is a major challenge within introductory economics modules, it can potentially be achieved, even within a traditional lecture-tutorial approach.

4.3.6.2. Constructive alignment to students through applications and examples

As already noted, introductory economics modules can be relatively theoretical. Despite acknowledging that theoretical concepts were important and necessary for progression, most interviewees did not express great levels of enthusiasm for theory.

NR: The module, has that made you more enthusiastic about economics, less enthusiastic or basically the same as before?

S1: Less enthusiastic.

S2: Lesser.

S3: Taken in isolation, very much less.

NR: Why is that?

S1: It's so theoretical.

S3: It's really dry.

NR: The same with you?

S2: Yes, it's quite boring really. Get it done, hopefully it'll be applied in the next few years.

NR: Is it the lack of application to the theory?

S2: You've got to have this to apply, there's no way you could do application as well in the first year (…).

S3: This is just a stepping stone module.

NR: (…) Is there anything within the module, and within maybe the theoretical that does enthuse you? Are there things, where you think: yeah, I can engage much more with this, or this (is) something I really want to find out how this works and it stimulates me to learn more?

S3: The only thing I cold think of like that would probably be the monopolistic competition, I thought that was very interesting, but then again I did a lot of A-level work and the way I was taught that was quite interesting, so I was quite interested in it all ready.

NR: What made it more interesting then?

S3: Well, at A-level we did case studies on monopolistic behaviours (of) different groups, (…) markets and things.

NR: Again because you are aware of the application side of things, it makes it seem more relevant or?

S3: Yeah.

NR: Anything else (you?) can think of that did occasionally enthuse you?

S1: Can't think of much.

S2: Never got that really excited.

S3: Excited is probably a bit too strong a term for this particular module, vague lukewarm, tepidness.

(E3F-stu5)

When asked what engaged and motivated them in their studies of economics, the common thread through virtually all the interview was the way in which the students talked about the importance of examples and the application of theory to real life and current issues. Satisfaction was experienced when the study of Economics enabled them to understand the world around them. Examples were not only said to promote engagement, but also to contribute to understanding. This insight applied to all the modules under investigation, including final year modules.

S: The other guy [the tutor] is brilliant, he likes to use examples.

(…)

N: What makes the other one better?

S: He puts economics in a way that we can understand. He uses football matches -

S: - or alcohol.

S: Something that we can relate to and we can say, right, we see what you mean.

(E2F-stu3)

S: Sometimes we use examples. Let's say for (example?) Tesco. We learn something about demand and supply and the teacher or someone from the class will use an example about Tesco, Sainsbury or something like that. And it makes sense. Sometimes I had bought things from Tesco let's say, and I couldn't understand why this was this price and why did they sell this and why did they sell that, and when they explained it in class, (it) makes sense now.

(E1F-stuA)

S: The economics of the modern world practically applied. It is interesting to see that it does actually work. And examples, it is up to the lecturer, if he is good enough, to identify these examples in the modern world.

NR: So these examples are quite important for your enthusiasm?

S: It makes it a bit more interesting, perhaps you will remember it a bit more with a real life example. It helps to explain it as well.

(E3F-stu4)

Indeed, all three modules recognised the importance of examples and application for engagement and understanding; however, when trying to align the respective environments to this aspect of student learning, each of them adopted a very different way of dealing with it. It has been suggested above that economics courses can be conceptualised as being situated on several continua (*Figures 1, 2 and 3*). If this is applied to the three settings under investigation, E3F is the most theoretical and technical module of the three. The E3F module leader talked about "littering theories with examples".

> L: Yeah. The idea is to make it intellectually stimulating, this is specialised and let's go for it. In fact what I've tried to do all along, it's not just an academic subject, we're trying to understand the real world and so you litter your theories with real world examples. And the more I enthuse about it, hopefully, the more I bring them long with me.
>
> (E3F-sta1)

E1F occupied a middle position by introducing theory in semester 1, followed by application in semester 2. This is what Vidler calls a "theory first" approach "in which students are schooled into an understanding of various theoretical models and then invited to apply such models to contemporary problems" (Vidler 1993: 179).

> L But we do try to bring in some applied aspects to the way in which we teach it because otherwise the students wouldn't be able to relate to what in a sense are quite old and dry principles of economics. So we are trying to introduce topic areas in an applied way.
>
> (…)
>
> L (…) We could tell them to go back to the original Adam Smith and to the original Alfred Marshall textbooks and look at the French and the Austrian tradition in microeconomics, but they would find that a deeply unrewarding exercise (laughs). So in line with the pedagogy of most of the undergraduate textbooks in economics, the modern ones, we look at the theory and the principles and then apply them to real-world examples, such that the students can understand them and learn through those examples.
>
> (E1F-sta1)

E2F's approach is most radical in the way in which it aims to make economics accessible to non-specialists by eliminating technical aspects, concentrating on "clear principles" and using examples which are as close as possible to the student experience.

> L: My idea for an introductory economics is that it's got to be a base for all students. Traditional economics courses at traditional universities have the same at what I was taught 25 years ago, and we've questioned the relevance of that. So we've tried to take clear principles of economics and then our economics students study "real" economics. It's not dumbing down. It's to take issues in economics and spend more time on parts of it rather than swamp them with diagrams and equations.
>
> NR: What is that you are doing differently?
>
> L: Well, last year I took a number of classes and I did some principles of economics from (?) markets and in 3 weeks I've used 2 diagrams. Some of my colleagues would use 200. In other words, it's an attempt to say: look instead of talking hypothetically about factories and stuff, the economics we can use for micro-economics is the economics of their everyday life. How do you spend money, use opportunity costs that way rather than saying the factory can produce guns or butter and that the factory produces so much of each. We're actually saying things like: you have a choice of going to the cinema, or you have the choice of staying home and saving money, or work at the pub. That's real economics!
>
> (E2F-sta2)

E2F was an interesting example of a distinctive approach to constructive alignment which goes against the grain of traditional economics. E2F was aimed at non-specialists and attempted to create a teaching-learning environment which helps students to think like economists by linking their understanding of economic concepts to personal, everyday experiences.

The different ways in which economic concepts are taught can be illustrated on a micro-level by looking at the introduction of one particular concept. The example which will be used is the concept of "elasticity", which refers to the responsiveness of demand to changes in price. Interview excerpts from two settings contrast two very different approaches to teaching elasticity. The first of the two excerpts illustrates the more common deductive approach used in E1F which introduced the concept by defining it and showing the relevant graphs and the formula for the calculation of elasticities before illustrating it, in a second step, with a variety of examples.

L Yes, we could take elasticity. We attack that notion in a very traditional way originally, initially, there will be formal lectures on elasticity. There will be tutorials, I will ask them to write back some answers to questions from the tutorials.

I So would you, in the lecture, you would explain the concept?

L I would explain the concept, yes. Then in the tutorials we would go through pricing strategies and see how elasticities are applied to say on-and-off peak rail travel, pricing of goods in motorway railway, service stations being more highly priced than the same item outside of a monopoly position.

I So you would explain that to them - ?

L - I would explain that to them and give them examples of how pricing strategies is central to firms, production decisions and consumers' consumption decisions. And under certain circumstances elasticity will change. So if you have a monopoly market as a motorway service station, you will charge more for a mars bar than when if it was in a corner shop where there are two or three competing outlets for the same product. On and off-peak rail travel will have different levels of elasticities. So trying to explore the teaching through fairly traditional methods, but hopefully insightful and interesting ways. In terms of their understanding, in terms of their learning, what I then do, I deposit this idea of elasticity within a wider assessment. So they will for their assessment, without realising it, the centre of that is elasticities. we will go to a Mintel Report which is a marketing report that has data on demand and supply, price changes which they can plug into the theoretical and the formula for calculation of elasticities. And they'll work out elasticities for quite detailed product groups: deodorants, bottled beer, sports footwear. And they'll be able to work out elasticity and then map out supply changes, demand changes, income and substitution effects of price changes which link into elasticities. Through that a very practical and a very detailed case study on using that. And then we'll generalise it out to see if there are any generalisable issues that can be concluded from that analysis.

I So then you go back to the theory I guess.

L Yes, but pretty much, or at least what I am trying to do put that into context. So the learning comes in a very traditional way that the (?), the teaching is fairly traditional, but the learning hopefully is much more direct so that they take this concept of elasticity, but will link it to supply and demand, scarcity, opportunity costs.

(E1F-sta1)

An inductive approach, on the other hand, was taken in E2F which started with an example of which the students have first-hand experience and which was then used to deduce the concept and the associated graphs

L: (...) Concepts like elasticity, how we measure it, some things are price sensitive or not price sensitive - my way of teaching that is to use a "what if" approach. If I'm with a group of students, instead of lecturing and giving you questions we'll start from scratch. "How much (on?) average would you pay for a beer, glass of wine, gin and tonic, in a pub?" "About 2 pounds." "How much do you drink a week in terms of units?" We add that up and that's the first point in our demand curve and then say "What if (it) went up to 4 pounds?" Then someone says "Well, I don't spend very much anyway so I'd buy the same number." or "I'd buy fewer". So, you ask a few students then you say "What if the price went to 20 pounds?". You're getting hypothetical numbers and you've constructed a demand curve for a sample of those students, so they get the point. I can then show that's how we build the market research but the

> text books just draw these curves and do the equations and that explains that, the other things (being?) equal as well. Then they may see that point that other things are equal, whereas if a lecturer uses diagrams, what do you mean by equal moving along a supply curve or demand curve? That can come afterwards. Quite often you can show that alcohol falls into the price insensitive range because when the price gets down you will drink more and when the price gets up you still use it as a social factor. So you spend the same amount of money, but you buy less but you don't cut your intake hugely. Alcohol is a good one with students, cigarettes is an appropriate one. If you go into a classroom of 18 year olds, the majority of European Western students, in a class of 20, and ask if they are teetotallers you'd be lucky if you got one, so alcohol works well as an example. It's a hell of a lot better than talking about making pies in a factory.
>
> (E2F-sta2)

Although all three modules were trying to tailor their teaching-learning environments to the way in which students learn by using examples and applications, the instance quoted above illustrates that there might be fundamentally different ways of achieving this. The recognition of such variation does not imply that one way is necessarily better than the other. The conclusion will be devoted to a discussion of whether this insight could have implications for the enhancement of introductory teaching-learning environments in economics.

5. Conclusion

There were considerable commonalities between the three settings which were investigated. As suggested by the economics in higher education literature, the data confirmed that the first year introductory economics modules followed a relatively standard lecture-tutorial approach, which was complemented by the use of textbooks and tutorial question sheets. Although using a standard format should not be problematic *per se*, the discussion has highlighted a number of issues which may affect student learning within such teaching-learning environments. The introductory lectures had a tendency to be fast paced and present students with a large quantity of information. This may work to the detriment of understanding and could lead to students using a surface approach. With economics being a highly conceptual discipline, lectures may need to provide throughlines (Wiske 1998) as well as highlighting as much as possible important concepts and the relationships between them. An effective lecture-tutorial approach also requires careful constructive alignment of tutorials with lectures. The interviews with students suggested that tutorials were most effective when they were constructively aligned to the students and allowed tutors the flexibility to decide between going over lecture material or challenging students' understanding and developing it further by tackling the set questions. A rigid use of set tutorial questions, however, may prevent such an approach. Equally, textbooks were shown to turn into a barrier to learning for some students as the language and the way in which the information is presented proved inaccessible.

The fact that the three modules comprised such heterogeneous groups of students appeared to be one of their major challenges, and variation between the three settings can be interpreted within the framework of constructive alignment to students. As the modules tended to be aligned to the majority, such alignment may cause problems for the minority. While students without previous knowledge of economics were more likely to experience difficulties and a heavy workload in an environment which is geared towards majors and/or students with previous knowledge, there was evidence that students who already possessed some knowledge of economics perceived the environments as partly or exclusively providing revision rather than stimulating them to re-evaluate their pre-existing knowledge and conceptualisations.

The way in which examples and applications were used in the three settings may indicate the direction into which economics instruction might usefully develop. While economics has

traditionally used a deductive "theories first" approach, the New Economics has highlighted the advantages of an inductive approach, in particular the way in which it might challenge students' everyday conceptions of economic phenomena (McCormick and Vidler 1994, Vidler 1993, Thomas 1991). As exemplified by some of the data presented above, such an approach would start with problems or cases and derive concepts, theories and models from them, as substantiated by the case study, problem-based or experimental approaches discussed above. Hounsell (1997) cites a study conducted by Eraut, MacKenzie and Papps in 1975, during which students of economics learnt concepts and analytical techniques in a "problem first" rather than a "theory first" approach, thus allowing them to "anchor" their knowledge "in a recognisable reality" (Hounsell 1997: 244). In line with students' preference for examples and applications, an inductive approach could contribute to understanding and engagement. It would also have the potential to circumvent the perception of revision as students with previous knowledge of economics would be confronted with problems and questions they have not encountered before. Taking such an approach, however, would mean turning curricula and teaching-learning environments in economics upside down - something which may take time to achieve in a discipline which has used a standard deductive format for a long time.

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References

Bartlett, R. L., and Ferber, M.A. (1998) 'Humanizing content and pedagogy in economics classrooms'. In Walstad, W. B., and Saunders, P. (eds.) *Teaching undergraduate economics. A handbook for instructors*. Boston et al: McGraw-Hill, pp. 109-125.

Becker, W. E., and Watts, M. (eds.) (1998). *Teaching economics to undergraduates. Alternatives to chalk and talk*. Cheltenham, UK, Northampton, MA, USA: Edward Elgar.

Becker, W. E. and M. Watts (2001). 'Teaching methods in U.S. undergraduate economics courses.' *Journal of Economic Education* 32(3): 269-279.

Biggs, J. (1999) *Teaching for Quality Learning at University. What the student does*. Buckingham and Philadelphia: Society for Research into Higher Education.

Biggs, J. (1996) 'Enhancing teaching through constructive alignment'. *Higher Education* 32: 347-364.

Brooksbank, D. J., Clark, A., *et al*. (1998). 'Views from the trenches: lessons from the introduction of WinEcon into a first year undergraduate programme.' *Computers in Higher Education Economics Review, the Virtual Edition* 12(1).

Boskin, M.J. (1998) 'Some Thoughts on Teaching Principles of Macroeconomics'. In Walstad, W.B., and Saunders, P. (eds.) *Teaching undergraduate economics. A handbook for instructors*. Boston et al: McGraw-Hill, 31-29.

Brown, G. with Bull, J., and Pendlebury, M. (1997). *Assessing Student Learning in Higher Education*. London: Routledge.

Brown, G., and Atkins, M. (1988) *Effective teaching in higher education*. London: Routledge.

Buckels, S. (1998) 'Using Cases as an Effective Active Learning Technique'. In Becker, W. E., and Watts, M. (eds.) *Teaching economics to undergraduates. Alternatives to chalk and talk*. Cheltenham, UK, Northampton, MA, USA: Edward Elgar, pp. 225-240

Chalmers, D., and McAusland, W.D.M. (2002) 'Computer-assisted Assessment'. In: *The Handbook for Economics Lecturers: Assessment*. Edited by J. Houston and D. Whigham.. Economics LTSN. http::/ /www.economics.ltsn.ac.uk/handbook/.

Cole, K. (1993). 'New directions in teaching economics'. *Economics and Business Education* 1(2): 79-84.

Davis and Erekson (1998). Teaching Intermediate Economic Theory. In Walstad, W.B., and Saunders, P. (eds.) *Teaching undergraduate economics. A handbook for instructors*. Boston et al: McGraw-Hill, pp. 43-57.

Elliot, C (2002) 'Case study 1: The use of a personal response system'. In: Sloman, J. (2002) 'Lecturing', p.22. In: *The Handbook for Economics Lecturers: Teaching*. Edited by P. Davies. Economics LTSN http::/ /www.economics.ltsn.ac.uk/handbook/

Entwistle, N, and Ramsden, P. (1983) *Understanding Student Learning.* London: Croom Helm

Forsythe, M. (2002) 'Problem-based Learning'. In *The Handbook for Economics Lecturers: Teaching* Edited by P. Davies. Economics LTSN. http::/ /www.economics.ltsn.ac.uk/handbook/

Frank, R.H. (1998) 'Teaching undergraduate economics'. In Walstad, W.B., and Saunders, P. (eds) *Teaching undergraduate economics. A handbook for instructors*. Boston et al, McGraw-Hill: pp.13-20.

Fry, H., Ketteridge, S., and Marshall, S. (eds.) (2003) *A handbook for teaching and learning in higher education. Enhancing academic practice*. Second edition. London and Sterling: Kogan Page.

Gärtner, M. (2001). 'Teaching economics to undergraduates in Europe: volume, structure, and contents.' *Journal of Economic Education* 32(3): 219-230.

Greenlaw, S. (2003) 'Using writing to enhance student learning in undergraduate economics'. *International Review of Economics Education* 1, 61-70.

Hansen, W.L. (1998) 'Integrating the practice of writing into economics instruction'. In Becker, W.E., and Watts, M. (eds.) *Teaching economics to undergraduates. Alternatives to chalk and talk*. Cheltenham, UK, Northampton, MA, USA: Edward Elgar, pp. 79-118.

Hartley, J. E. (2001) 'The great books and economics'. *Journal of Economic Education* 32(1): 147-159.

Hobbs, P. and Judge, G. (1995) 'Economics: WinEcon - a new generation computer package for introductory economics'. *Social Science Computer Review* 13(4): 40-421.

Holt, C. A. and T. McDaniel (1998). Experimental economics in the classroom. In Walstad, W.B., and Saunders, P. (eds.) *Teaching undergraduate economics. A handbook for instructors*. Boston et al.: McGraw-Hill, pp. 257-268.

Hounsell, D., and McCune, V. (2002). *Teaching-learning environments in undergraduate biology: initial perspectives and findings*. Universities of Edinburgh, Coventry and Durham: Enhancing Teaching-Learning Environments in Undergraduate Courses (ETL) Project, Occasional Reports, 2.

Hounsell, D. and McCulloch, M. (1999) 'Assessing Skills in Scottish Higher Education'. In: Dunne, E. (ed.) *The Learning Society: International Perspectives on Core Skills in Higher Education*. London: Kogan Page, pp.149-158.

Hounsell, D. (1997) 'Understanding Teaching and Teaching for Understanding'. In: Marton, F., Hounsell, D., and Entwistle, N. (eds.) *The Experience of Learning. Implications for Teaching and Studying in Higher Education*. Second edition. Edinburgh: Scottish Academic Press, pp. 238-257.

Kish-Goodling 1998 'Using the Merchant of Venice in teaching monetary economics'. *Journal of Economic Education* 29 (4), 330-339.

Lawson, C. W. (1989). 'Undergraduate economics education in English and Welsh Universities'. *Journal of Economic Education* 20(4): 391-404.

McConnell, C.R. (1998) 'Reflections on the principles course'. In Walstad, W.B., and Saunders, P. (eds.) *Teaching undergraduate economics. A handbook for instructors*. Boston et al: McGraw-Hill, pp. 31-42.

McCormick. B., and Vidler, C. (1994) *The Economics 16-19 Project. Teaching and learning the new economics*. Oxford: Heinemann.

Miller, N. (2002) 'Alternative Forms of Formative and Summative Assessment'. In *The Handbook for Economics Lecturers: Assessment*. Edited by Houston, J., and Whigham, D. Economics LTSN. http://www.economics.ltsn.ac.uk/handbook/

Noussair, C., and Walker, J (1998) 'Student decision making as active learning: experimental economics in the classroom' In: Becker, W.E., and Watts, M. (eds.) *Teaching economics to undergraduates. Alternatives to chalk and talk*. Cheltenham, UK, Northampton, MA, USA: Edward Elgar, pp. 49-77.

Oxoby, R. J. (2001). 'A monopoly classroom experiment'. *Journal of Economic Education* 32(2): 160-168.

O'Leary, R., and Ramsden, A. (2002) 'Virtual Learning Environments'. In *The Handbook for Economics Lecturers: Teaching*. Edited by Davies, P. Economics LTSN. http::/ /www.economics.ltsn.ac.uk/handbook/

Petr, J. L. (1998) 'Student writing as a guide to student thinking'. In Walstad, W.B., and Saunders, P. (eds.) *Teaching undergraduate economics. A handbook for instructors*. Boston et al: McGraw-Hill, pp. 227-243.

Scahill, E.M. (1998) 'A Connecticut Yankee in Estonia'. *Journal of Economic Education* 29 (4), 340-346.

Siegfried, J. J. (1998) 'The goals and objectives of the economics major'. In Walstad, W.B., and Saunders, P. (eds.) *Teaching undergraduate economics. A handbook for instructors* Boston et al: McGraw-Hill, pp. 59-72.

Siegfried, J.J., and Sanderson, A.R. (1998) 'Using sports to teach economics'. In Becker, W. E., and Watts, M. (eds.) *Teaching economics to undergraduates. Alternatives to chalk and talk*. Cheltenham, UK, Northampton, MA, USA: Edward Elgar, pp. 161-183.

Siegfried, J. J. and W. B. Walstad (1998) ‚Research on teaching college economics'. In Walstad, W.B., and Saunders, P. (eds.) *Teaching undergraduate economics. A handbook for instructors*. Boston et al: McGraw-Hill, pp. 141-166.

Sloman, J (2002) 'Lecturing'. In *The Handbook for Economics Lecturers: Teaching*. Edited by Davies, P. Economics LTSN. http::/ /www.economics.ltsn.ac.uk/handbook/

Sosin, K. (1998) 'Using the Internet and Computer Technology to Teach Economics'. In Becker, W. E., and Watts, M. (eds.) *Teaching economics to undergraduates. Alternatives to chalk and talk*. Cheltenham, UK, Northampton, MA, USA: Edward Elgar, pp. 119-140.

Sutcliffe, M. (2002) ‚Simulations, Games and Role-play'. In *The Handbook for Economics Lecturers: Teaching*. Edited by Davies, P.. Economics LTSN. http::/ /www.economics.ltsn.ac.uk/handbook/

Taylor, R. (2002a) 'Tutorials and Seminars'. In *The Handbook for Economics Lecturers: Teaching*. Edited by Davies, P. Economics LTSN. http::/ /www.economics.ltsn.ac.uk/handbook/

Taylor, R. (2002b) 'Designing Undergraduate Degree Programmes'. In *The Handbook for Economics Lecturers: Course Design*. Edited by Newlands, D. Economics LTSN. http::/ /www.economics.ltsn.ac.uk/handbook/

Thomas, L. (1991) 'A new perspective on learning economics'. *Economics* 27(2): 79-83.

Vidler, C. (1993) 'Start making sense'. *Economics and Business Education* 1(4), 178-181.

Volpe, G. (2002) 'Case studies'. In *The Handbook for Economics Lecturers: Teaching*. Edited by Davies, P. Economics LTSN. http::/ /www.economics.ltsn.ac.uk/handbook/

Walstad, W.B. (2001) 'Improving Assessment in University Economics'. *Journal of Economic Education* 32(3), 281-294.

Walstad, W. B., and Saunders, P. (eds.) (1998). *Teaching undergraduate economics. A handbook for instructors*. Boston et al: McGraw-Hill.

Walstad, W.B., Watts, M. and Bosshart, W. (1998) 'The principles of economics textbook: history, content, and use' In Walstad, W. B., and Saunders, P. (eds.) *Teaching undergraduate economics. A handbook for instructors*. Boston et al: McGraw-Hill, pp. 185-205.

Watts, M. (1998) 'Using literature and drama in undergraduate economics courses'. In Becker, W. E., and Watts, M. (eds.) *Teaching economics to undergraduates. Alternatives to chalk and talk*. Cheltenham, UK, Northampton, MA, USA: Edward Elgar, pp. 185-207.

Watts, M., and Smith,, R.F. (1989) 'Economics in literature and drama'. *Journal of Economic Education* 20(3), 291-307.

Williams, A. W. and Walker, J.M. (1993) 'Computerized laboratory exercises for microeconomics education: three applications motivated by experimental economics'. *Journal of Economic Education* 24(4): 291-315.

Wiske, M. S. 1998 'What is teaching for understanding?' In Wiske, M.S. (ed.): *Teaching for understanding. Linking research with practice*. San Franscisco: Jossey-Bass, pp. 61-86.