

Teaching for Better Learning: A Blended Learning Pilot Project with First-Year Geography Undergraduates

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ABSTRACT *Internationally, recognition is growing that the transition between post-primary and higher education is raising a number of challenges for both students and educators. Simultaneously with growing class sizes, resources have become more constrained and there is a new set of expectations from the “net generation” (Mohanna, 2007, p. 211) The use of e-learning in medical education, Postgraduate Medical Journal, 83, p. 211). Within this transforming context, modes of instruction that cater for different paces of learning and learning styles by combining traditional and electronic media have become increasingly important. This paper discusses the transformation of an introductory human geography module at University College Dublin using a blended learning approach that extends beyond the media used to incorporate all aspects of, and inputs into, the learning process. Our experience highlights how blended learning can aid the achievement of a range of objectives in relation to student engagement and the promotion of deeper learning. However, blended learning is not a quick-fix solution to all issues relating to new university students and our analysis draws out a more complex relationship than anticipated between blended learning and student retention that will require further examination.*

KEY WORDS: Blended learning, communities of enquiry, first year, student engagement

Introduction

As universities and other higher education institutions face growing student numbers, constraints of space and a more diverse student mix, the sole dependence on the traditional face-to-face lecture is no longer possible or appropriate in many contexts (El Mansour & Mupinga, 2007). Garrison and Vaughan (2008, p. ix) have even suggested that “those who have grown up with interactive technology are not always comfortable with the information transmission approach of large lectures. Students expect a relevant and engaging learning approach”. Promoting a more student-centred approach to learning while meeting the competing demands on academic time is not easy but Dalsgaard and Godsk (2007) have suggested that blended learning techniques have the potential to facilitate this process. By comprising a significant online element to complement the

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face-to-face component of particular modules, the learning environment becomes more flexible in terms of the timing and pace of learning as well as the approaches adopted.

Drawing on the work of Hinterberger *et al.* (2004), we argue that blended learning is more than just the combination of face-to-face and online learning, but rather involves more general mixes of teaching and learning approaches. A blended learning design may therefore encourage more active learning and engagement with particular topics and modules. While the online component allows students to access the necessary content, the reduced numbers of face-to-face lectures result in the students being forced to investigate topics themselves or with their peers, rather than depending on the lecturer to provide all the answers in class. In the first year of university, the traditional lecture environment can be alien and overwhelming. This is especially the case in programmes and institutions where there may be very large classes of over 200 students in one lecture theatre. In this situation, it is easy to rely on a didactic, teacher-centred approach to education where the lecturer is considered an expert rather than the facilitator of knowledge acquisition. Students, through no fault of their own, can very quickly become socialized into a passive approach to learning with an overall detrimental impact on their academic development. A key advantage of blended learning is that the online discussion boards, chat rooms and other tools can facilitate questioning, investigation and discussion with both their mentors and peers in a way that is more difficult in a crowded lecture theatre. The online component also facilitates content availability, and supports self-directed learning. Additionally, it supports operational and/or administrative activities such as the management of groups or the circulation of important notices and instructions (Vogel & Oliver, 2006). Through the use of a range of synchronous and asynchronous communication tools, as well as audio, video, text, graphics and other resources in the virtual learning component, greater interest in particular topics may be stimulated (El Mansour & Mupinga, 2007) and a heightened sense of a learning community created (Rovai & Jordan, 2004; O'Rourke, 2007). It is no surprise that this approach has become very popular throughout the sciences, particularly in Medicine and Veterinary programmes, given that it has been most closely associated with the facilitation of problem-based learning simulating real-life clinical or technical scenarios (Ginns & Ellis, 2007). However, generally within the Humanities and Social Sciences, although there are similar opportunities for blended learning to take place, the adoption of this approach appears to have been much slower.

The slow pace of adoption may be because blended learning has been subject to some criticism. Oliver and Trigwell (2005) argue that it creates unnecessary dichotomies, is conceptually fuzzy and should be at least reconceived, if not abandoned, as a learning approach. They suggest that it does not place enough emphasis on the learner as it is primarily concerned with the mechanics of teaching and learning. While this may be true in some contexts, in general, these criticisms appear harsh and ignore the underlying motivations of many educators who adopt a blended learning approach. In their learning styles research, Felder and Soloman (undated) clearly suggest that the relationship between course design and student learning style is very clear. If a blended learning design using a range of media, engaging students in a variety of activities and promoting a diversity of learning environments—from online to lecture hall—is developed, it seems reasonable to assume that the adoption of a more active learning style incorporating time for thinking, doing and reflecting will be fostered (Healey & Roberts, 2004). Similarly, Entwistle and Smith (2002) have argued that the way in which students perceive a learning

situation is what determines their learning approach. Students who are encouraged to question, value equally, engage with and see the synergies between the face-to-face and online components will be more likely to benefit from a blended learning approach. This may be driven by the opportunities provided to them to adopt a more heuristic approach and self-regulate their depth and pace of learning. The knowledge that face-to-face classes will complement and clarify the online component as needed provides the necessary ‘safety net’ to allow students to move beyond the more traditional or ‘normal’ strictures of learning.

Building on the existing literature and drawing on our own experiences, we argue that a blended learning approach offers significant potential for geographers who wish to engage students in active learning, particularly in large-group and introductory classes. In making this assertion, we argue for an expanded understanding of blended learning. This broader perspective sees blended learning as a combination of both the online and face-to-face incorporating a range of learning materials, resources, types of assessments and in-class activities. The remainder of this paper outlines and assesses this approach to blended learning in practice, drawing on the redesign and delivery of a first-year introductory human geography module.

Blended Learning and the University College Dublin Large Class Teaching Project

Geography is now one of the most popular subjects in Arts degree programmes in the Republic of Ireland. In University College Dublin (UCD), close to 900 students take geography modules over the three years of the BA degree programme. Numbers in first-year introductory modules have grown significantly, and first-year modules with an upper limit of 400 students are regularly oversubscribed. BA students at UCD do not choose their majors until second year, so first-year modules are important in attracting students to the discipline, awakening their interest in the subject and helping them to see geography as an engaging and interesting degree subject. However, our ability to employ small group teaching approaches is curtailed by our limited staff numbers, which have not increased despite the growth in undergraduate numbers. As a result, we rely on postgraduate students—often, relatively inexperienced one-year Masters students—for small group teaching in first-year tutorials.

We first taught this module in 2005–2006, and did so using a conventional approach: lectures, tutorials, an assigned textbook and an end-of-semester examination. While student evaluations were generally positive, on reflection we felt that we had not encouraged or facilitated deep learning among students, and the result was a more superficial engagement with ideas and concepts than we would have liked. Poor attendance was also an issue, not unique to this particular module but a problem right across the large first-year Arts and Science classes in the university. We had used the university-supported online learning environment, Blackboard, to provide resources to students but we felt its structure hampered our efforts to encourage deep learning. In particular, the hierarchical organization of Blackboard provided few opportunities for interlinking or cross-referencing information. While one of the key stated learning outcomes was that students would by the end of the module be able to make connections between different concepts and ideas introduced in class, detailed reflection uncovered a disconnect between the learning outcomes that we desired and the way in which we could provide resources to students.

Enhancing the student learning experience, promoting autonomous learning, promoting lifelong and flexible learning, and developing communities of enquiry are at the heart of the UCD vision of tertiary education. When we were asked to take part in a pilot Large Class Teaching Project (LCTP) in UCD, we welcomed the opportunity to contribute to the development of these objectives and a blended learning design offered us the potential to do so. The focus of the LCTP was specifically to improve the first-year experience in UCD and a pilot module was also developed in the School of Biological Sciences. Under the framework of this project, mentoring from the Centre for Teaching and Learning and senior academics with responsibility for teaching and learning at the university level, as well as technical and small-scale financial support, was made available to us. Our role was to radically redesign the first-year geography module in terms of content and delivery, with the goal of enhancing student engagement and retention. As well as the concerns that we had already identified around student engagement, attendance and attitudes to learning, we also took the opportunity to better incorporate generic learning skills into our module and to encourage the formation of social networks for learning. The dramatic increase in student numbers in the last five years had resulted in the removal of fieldwork and practical classes, a traditional way of meeting peers and developing social networks and skills, from our first-year curriculum. We viewed the LCTP as an opportunity to address the skills deficit and to promote better social interaction, a real concern as evidence has shown that first-year students in large classes can very quickly feel disconnected and isolated, leading to disengagement and lack of success (UCD; First-Year Experience Survey, 2007).

Although many writers have cited a range of logistical reasons for a move to blended learning (Rovai & Jordan, 2004; El Mansour & Mupinga, 2007), our rationale was primarily driven by a desire to enhance the student experience. Ellis *et al.* (2006) argue that blended learning can be an important way of encouraging student discussion as the online and face-to-face environments provide diverse opportunities for discussion and peer engagement that may accommodate different kinds of learning styles and personalities. It is reasonable to suggest that the combination of environments and media used provides more opportunity to match teaching with a range of learning styles, potentially stimulates more interest and better engagement (El Mansour & Mupinga, 2007) and encourages greater democratization of the learning process. Garrison and Vaughan (2008, p. 30) suggest that “the fusion of real and virtual experiences [through blended learning] creates unique communities of enquiry that are accessible regardless of time and location”. While this was a critical aspect of module redesign, we were wary neither to overburden students nor to place competing time demands on them (Ellis *et al.*, 2006).

Ginns and Ellis (2007) have suggested that in adopting a blended learning approach, students must perceive the virtual learning component as a critical part of the module and understand its role in supporting the module as a whole. Underpinning the new learning design of our module were questions regarding how we might get students to routinely use the virtual learning environment (VLE), an acknowledged difficulty in other contexts, and how to make different parts of the course available at selected intervals so that they would engage with all parts of an integrated learning experience. This was critical as evidence found by Davies and Graff (2005) in relation to a first-year undergraduate business module suggests that students who failed the module had spent a significantly lower proportion of time in the group and communication sections of the course website.

We also believe that the concept of blended learning, broadly applied, allows us to move beyond the strictures of other popular approaches like problem-based learning (Spronken-

Smith, 2005). One of the difficulties with problem-based learning from our perspective is that it involves intensive use of resources. Spronken-Smith (2005), for example, wrote of a third-year research methods class with between 60 and 75 students, taught by a variety of people including six tutors, many of whom were lecturers. In her study, group sizes of 7–8 were, in retrospect, felt to be too large. In our case, we had 370 students, two lecturers and tutorial groups of 15 taught by postgraduates with limited experience of teaching at the university level. Therefore, to improve the student experience of first-year geography, within the confines of resource restrictions, blended learning offered us a way of drawing on recent initiatives, particularly in terms of enquiry-based learning.

Transforming *Introduction to Human Geography I*

Bearing in mind the desires of the university in relation to the LCTP, the critical issues identified by the module coordinators and lessons from the relevant literature, module redesign was guided by a number of overarching principles:

- to present material in a thematic rather than compartmentalized way to align with the desired learning outcomes;
- to allow students to engage in learning activities rather than passively receiving information;
- to integrate module content with the development of generic skills and the fostering of social networks or communities of learning.

Our particular approach had at its core, enquiry-based learning. As a form of problem-based learning, this offers “another dimension to undergraduate education as it purports to strengthen teaching–research links by bringing teachers and students together in a community of enquiry, and is inherently learning-centred” (Spronken-Smith, 2005, p. 2; Spronken-Smith *et al.*, 2008). Hodge *et al.* (2008) have also suggested that the use of new technologies provide newfound opportunities to promote research-based learning and to develop students as scholars from an early stage. We began redesign with these factors in mind in March 2006, with a view to delivery in January 2007, and guidance was provided by the Centre for Teaching and Learning within the university.

Adopting a student-centred or ‘student as partners’ approach characterized this module from the outset. In contrast to the arguments made by Oliver and Trigwell (2005), the blended learning approach provided opportunities to do this from design to evaluation. In summer 2006, three undergraduate students who had successfully completed their second year were employed to develop module content. At that point, the learning design was in place and the coordinators had identified four case studies that would unify the module content (see Appendix 1). The students were then given the freedom to source/develop content that they considered to be appropriate and potentially helpful for learning. Weekly meetings between the students and the module coordinators took place to review progress, resolve difficulties and provide general guidance. The students were provided with access to iMac computers, video cameras, digital photo cameras and the Internet and were encouraged to demonstrate a range of research skills that they had learnt during their own studies including fieldwork, interviewing and documentary analysis. They were given full control of the design of the VLE and at the end of the internship, the coordinators reviewed the completed case studies and discussed with the students how the material would be used and adjusted if necessary.

In this new design, the number of formal lecture hours per week was reduced from two to one, to allow time for students to engage with the online materials and to carry out independent research (Choules, 2006). The second dedicated hour was reserved for consultation, to allow time for student group work and to add in an additional lecture, if it was considered necessary for purposes of clarifying material. In general, the module was designed to facilitate more self-directed and, critically, peer learning. Assessments were organized around the four case studies, each worth 20 per cent, and an ongoing group project also worth 20 per cent. Assessment for each case study followed the model outlined in Figure 1 with weekly assignments. These were a mix of online, face-to-face, individual and group work and became more challenging as the module progressed. The rationale drew on research by Garrick (1998) who suggests that effective learning entails a student-centred approach that fosters the independent thinking, team-working and enterprise skills required by employers. However, we also recognized that some students are less intrinsically motivated than others and we constructed our assessment strategy to incentivize attendance and participation in tutorials as well as ongoing engagement with the learning materials.

Delivering the Module

Our module ran in its revised form for the first time from January to May 2007. Over the course of a 12-week-teaching semester, we met with the students in a formal lecture setting

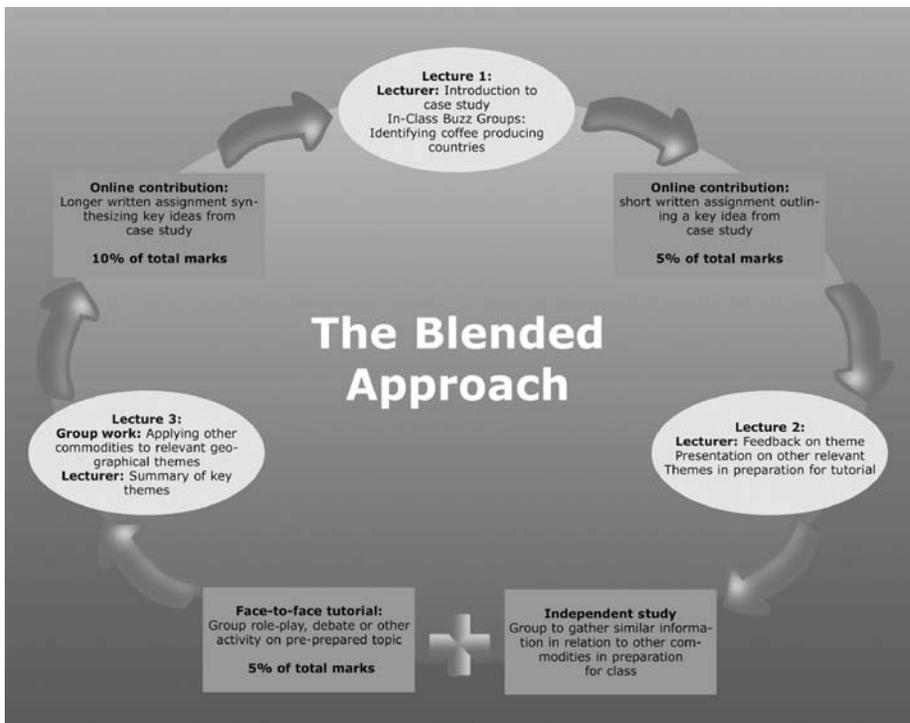


Figure 1. Example of the learning sequence for case study 1

for at least one and at most two hours a week. At the start of the semester, students were organized into online groups of seven to eight people for discussion and group work. Two of these small groups were combined for face-to-face tutorials and each student participated in four of these tutorials over the course of the semester.

Lectures and Tutorials

From the beginning, we attempted to make the lectures as interactive as possible. We both attended and presented lectures, switching positions and roles at regular intervals. After the second week, we asked students to sit in their tutorial groups so we could ensure that all lectures involved some form of group activity and conversation. Generally, this involved introducing the case study theme, outlining a number of important questions and asking students to think about and discuss them with their groups. We moved between the groups, asking questions, encouraging debate and then asking group members to outline their findings to the lecture hall, holding a microphone in front of them. Though the students remained in their seats and in their groups for this, many were shy and reluctant to speak in public. We did not force anyone to speak, but were able to identify and encourage those who wanted to speak but were lacking some confidence. Much of this discussion fed directly into a subsequent assignment that encouraged further consideration of and reflection on ideas that had been raised in class.

Tutorials were 50 minutes in length, and were run by geography postgraduate students, both MA and PhD. They were inserted into the module programme in weeks 2, 5, 8 and 11, which corresponded to the middle of each case study, as we considered this the most important times for small-group face-to-face discussion and debate. We designed the tutorials, provided training on content for tutors and also coordinated an MA module on Teaching Skills to ensure that the postgraduate students were fully skilled in leading small group discussion. In advance of tutorials, students were assigned preparatory work. The tutorials were designed on the basis that the preparatory work had been completed, and involved debates, discussions, group map work and statistical analysis. Students were awarded marks for their preparation, attendance and participation in tutorials in line with clearly specified criteria that were published in the online forum (Table 1).

Table 1. Grading criteria for tutorials

Award	Criteria
5 Marks	Critical thinking beyond that normally expected at Stage 1, active participation in tutorial, evidence of good preparation and attendance at tutorial
4 Marks	Active participation, evidence of good preparation and attendance at tutorial
3 Marks	Evidence of good preparation and attendance at tutorial
2 Marks	Attendance at tutorial
0 Marks	Non-attendance

Online Learning Environment

Though UCD institutionally supports Blackboard as the recommended VLE, the use of Moodle was facilitated on a pilot basis for this project after we argued the case for delivering our module using this system. The site was hosted and supported by a commercial company. We designed the Moodle site in advance, so our interaction with the site during the semester primarily involved posting news items and clarifications, dealing with problems, monitoring student and tutor activity, and grading online assignments. We did not use the site to post lecture notes or PowerPoint presentations, and encouraged students who missed lectures to talk to their online groups, tutors or us about the material that was covered.

Our Changing Roles

Managing a class size of 370 in a lecture theatre is demanding. Prior to this and in the more traditional lecture format, we had described our roles as the intersection of entertainment and crowd control. Through the performance of a lecture, we attempted to attract students to a lecture, retain them in the theatre, distract them from distracting others and get them interested in and inspired by our material. Often, however, crowd control dominated, and our conversations about teaching focused on what to do with problems such as students talking to each other, texting or surfing on Bebo, or walking in and out of the lecture theatre at random times. In this module, we changed our focus. Rather than delivering our lecture in a didactic manner, we worked on making the hour more interactive. Rather than worrying about conversation, we encouraged it. Rather than being concerned with movement, we facilitated it. The lecture hours were, as a consequence, less rigid, more chaotic and significantly more interactive. We wrote and planned our lecture structure and material immediately prior to the lecture hour responding to ideas raised in student assignments and student concerns. Frequently, those concerns were with how things worked—the website, the assignments and the library—rather than with ideas. As a consequence, we often felt more like module managers than teachers, but this related more to our perception of what teaching should be rather than the reality of teaching large classes. The most significant change related to how we used our time. During the teaching semester, we spent significantly less time preparing lectures, and significantly more time responding to student questions and concerns, tutor queries and problems, grading assignments, and monitoring the VLE.

One of the key areas we focused on was integrating the online environment, the tutorials and the lecture. We did this in a number of ways. At the start of every lecture, we directed students to the online material, and highlighted upcoming activities such as tutorials and assignments. However, our most important innovation was incorporating student work into our lectures. We took student-generated material from online discussions, submitted assignments and tutorials, and used it as content for our lectures. For example, we used examples of conflict that students had identified in their groups as the basis for a lecture focusing on power and conflict (see Table 2) and as a springboard into concepts such as agents of landscape change. For another class, we scanned maps that students had produced in tutorials and used them as part of a lecture on global migration patterns (see Figure 2). At all times, we identified the source of the material by group number, which led initially to embarrassment and later to pleasure when the group's contribution was used as

an example of good work. Through our efforts, some students began to see the lecture, and the module, as collaborative rather than didactic, and gave positive feedback and comment on being able to contribute to lecture content and the development of the module.

Evaluating the Module

This module was evaluated both formally and informally on an ongoing basis by the module coordinators and colleagues from the School of Psychology. We monitored online group discussions and dealt promptly with issues or difficulties as they arose. We also encouraged the tutors to monitor discussions in their groups and in tutorials, and to use the teacher forum in the online environment to raise any issues of concern and also to discuss with other tutors how they felt the module was going. Students and tutors gave us informal feedback after class, in the corridor, during office hours, or through the School Staff–Student Committee. This gave us an insight into how the module was being received by both students and tutors, and enabled us to be responsive to their needs and anxieties.

More formal evaluation of the module also took place through the Students' Experiences of Teaching and Learning Questionnaire that was administered to students at three time points during the semester. Time 1 was during week 1, time 2 was during week 6 and time 3 was during week 11. A descriptive analysis was undertaken and frequency tables were produced that reported on the responses across the three time periods. A series of paired sample *t*-tests were also conducted to examine whether student perceptions changed during the course of the semester. Issues of engagement, attendance, social experience and general perceptions were investigated. The final questionnaire also included a set of questions designed to gauge student perceptions of this module in comparison to the other geography modules in the first-year programme. In order to investigate the results and add depth to the quantitative findings, a small number of focus groups were undertaken with first-year students. These were organized on a voluntary basis and involved general discussions on the experience of the module and student reactions to it. Focus groups were also held with the tutors at two points in the semester, one midway through the module and one at the end.

Discussion

A number of key findings emerged from the evaluations and our reflections on the experience of redesigning and delivering a first-year module in a blended learning environment. Although group work is an important aspect of collaborative and enquiry-based learning, it also brings with it a number of challenges. The ongoing group assignment was the production of a Group Glossary on key geographical themes and, unsurprisingly, during the module, student concerns were raised about the unequal contributions being made to the assignment by some members of particular groups. Although we initially adopted a 'hands-off' approach and encouraged students to try to motivate their peers and develop skills in group dynamics, major concerns remained. As a result, it was necessary to make a specific intervention by developing a more nuanced approach to grading the glossary. After discussion with each other and with student representatives, we decided that 12/20 marks would be allocated to the glossary content produced by the group and 8/20 marks would be attributed to the individual contribution to the group assignment. This ratio was chosen to ensure that an incentive remained to

engage in group activity. Difficulties with group work are not unique to this module; other studies have identified the problems students have in coping with group dynamics when collaborative learning is employed (e.g. Plowright & Watkins, 2004). These difficulties regularly surfaced in responses to an open-ended question at the end of the questionnaire, when students suggested that we “change amount of group work; it can be hard to meet with your group and it affects your mark”, or “get rid of group work”. However, and in contrast, other students suggested that we “encourage the groups to meet more” and have “more group assignments; it strengthens team work”. Group work emerged as a key issue in some of the quantitative responses, which indicated that it can actually play a hugely positive role from a practical as well as a learning perspective. In a question asking students to score eight reasons for attending lectures and tutorials in order of importance, “feeling responsibility to my group to be there” was ranked 1, 2 or 3 by 49.7 per cent of students. This suggests that peer motivation and a sense of collective responsibility was a key factor influencing attendance and engagement with this module.

Analysis of the results also suggests that assessing the module by tutorial participation and a range of continuous assessments throughout the semester has played an important role in keeping students engaged and motivated them to attend lectures and tutorials (Figure 3). Students rate the relevance of the tutorials to the assignments as critical in their decision-making processes, highlighting the absolute necessity of ensuring constructive alignment of all elements of the module, but more importantly, incentivization of attendance and participation emerged as the crucial factor in promoting better engagement and attendance. Of those who responded ($n = 203$), 24 per cent of students reported that the most important reason they attended tutorials was because they get marks for them. While we may idealistically believe that attendance at tutorials should be expected, these findings suggest that an understanding of student motivation is crucial in developing methods of enhancing student engagement. Student engagement during this module does appear to have been much higher than in modules delivered in a more traditional manner, and as this was a core objective of our redesign, it was an encouraging finding. While we had a general sense that this was the case from early on in the module, the results of the evaluation supported this assertion very clearly. Ninety-two per cent of the respondents to

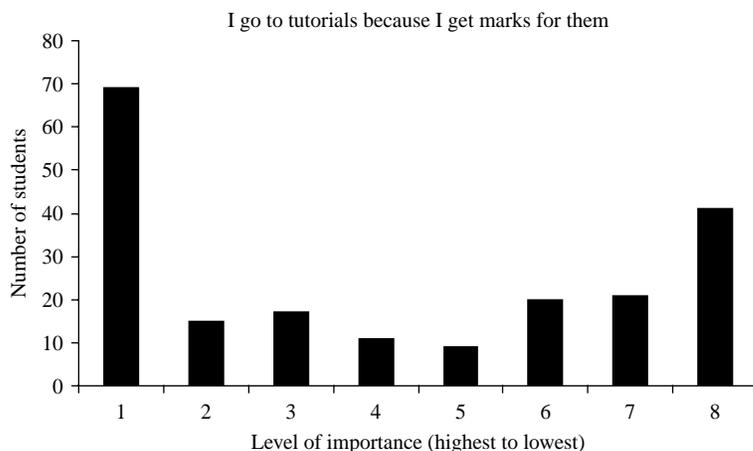


Figure 3. Reasons for attendance at lectures and tutorials

Table 3. Participation in GEOG 10030 compared with other geography modules

	Worked hard with classmates outside class		Used electronic medium		Spent time pre- paring for lectures		Attended tutorials	
	GEOG 10030	Other modules	GEOG 10030	Other modules	GEOG 10030	Other modules	GEOG 10030	Other modules
Never	14	117	11	91	5	54	4	10
Sometimes	53	45	41	44	42	56	18	45
Often	50	10	53	26	68	55	40	57
Very often	82	13	94	24	84	20	136	73

the survey were also taking at least one other, if not more, geography module as part of their first year. They were asked to score their participation in this module and in their other geography modules using a Likert scale. The results in Table 3 demonstrate that on a number of widely accepted measures of engagement (NSSE, 2009), students participated much more actively in *Introduction to Human Geography I* (GEOG 10030). This was particularly evident in the time that they spent preparing for lectures, the work that they did with classmates outside the lecture or tutorial room and their use of the electronic medium, a core element in the blended learning approach. However, while engagement was generally higher than in other modules, patterns of activity monitored in the online environment demonstrated that this was again primarily driven by the pattern of assessments. Logs of activity demonstrate marked increases in activity in the days immediately prior to an assignment deadline. It might reasonably be suggested that while student behaviour changed to the extent that there was more regular engagement with the material and classes, some old behaviour patterns in relation to ‘cramming the night before an exam’, or in this case an assessment, remained evident. Additionally, because the assessment was by short online submissions, plagiarism became a major issue with which we had to contend. Some students heavily depended on resources such as Wikipedia and the ease with which they could ‘cut and paste’ was quickly discovered. While we deducted grades and outlined the seriousness of plagiarism within a university setting, some students still persisted. More recently, an online skills tutorial on plagiarism and appropriate referencing has been incorporated into the module. Students must produce a written statement with their assignments stating that they have taken the tutorial and are aware of the seriousness and implications of plagiarism. Providing this resource has allowed us to adopt a zero-tolerance policy to plagiarism and the extent to which it is now occurring has been substantially reduced.

However, one of the most significant changes in relation to student behaviour was their embrace of social learning networks, facilitated through the online discussion board and the regulatory role that they adopted with each other. This only occurred gradually and after much encouragement as one of the key issues for us, early in this module, was to promote the idea of self-directed learning. For many students, this was a significant challenge and they experienced some difficulty in taking responsibility for the pace and progression of their learning. In particular, learning to follow exactly instructions regarding assignments, getting used to the idea that they had to prepare and actively participate in tutorials, and attending lectures that were more discursive and raising

questions rather than being content-driven and providing answers required major adjustment. Spending more time discussing and developing an understanding of self-directed learning is something that the module coordinators will do in future years, as well as ensuring that instructions for assignments and other work are written without any assumption of prior skills or knowledge. Nonetheless, as the module progressed, the kinds of interaction taking place suggested that levels of self-confidence were growing and students began actively monitoring as well as facilitating each others' learning within the groups. They appeared to act as effective motivators to each other, as exemplified in this exchange in one of the learning groups:

Student A: Alright, anyone else online now to do this thing on globalization?

Student B: Yeah, so any ideas?

Student C: Hi there . . . yeah I am also online so we should probably try and get some work done. Have you read the articles?

Student A: Think we should get started with some ideas, from a few places I've looked globalization has been defined as the ever-growing unification and interdependence of the global community. If we all start posting ideas then we can put it all together and submit our answer.

Student D: We could start with a definition, and then have a detailed example, maybe some pros and cons and that would be around the required word count. Any ideas? A con for globalization is that some believe it is killing local traditions and local trade. Starbucks were targeted several times by anti-globalization protestors as their continuous opening of new shops was destroying the local coffee shop businesses, some of which had been around for decades. This was a worry in Madrid.

Student C: Right so why don't we all read the articles, then post about 100 words on globalization by this evening or tomorrow. We can put our answer together then when everybody's submitted something?

As well as these significant behavioural changes illustrating a marked increase in active learning and the successful formation of social networks for learning, students' perception of the module also changed throughout the course of the semester. While many students stated at the beginning that they were taking the module because of its perceived easiness, during the first six weeks, the quantitative data shows a significant change and students were much less likely to consider it an easy option. This levelled out during the second part of the module, suggesting that students were initially surprised by the amount and regularity of work that this module demanded, but that they rose to the challenges they encountered. However, in comparing the end-of-module results with the results from the previous year when a more traditional approach was adopted, there is a clear shift in the overall pattern of performance. In 2005/2006, when a similar module was delivered in a traditional manner, the results displayed a normal distribution with the mean around the C/C- grade (Figure 4). However, in 2006/2007, following the introduction of a blended learning approach, a bimodal distribution emerged (Figure 5). Almost 11 per cent of students received A grades in comparison to less than 2 per cent in the previous year. Choules (2006, p. 216) has argued in relation to e-learning and blended learning that "as with most teaching modalities, deep rather than superficial learners appear to enjoy the greatest benefit" and the results of GEOG 10030 would appear to bear this out. Those students who engaged with the new approach did significantly better than in the more

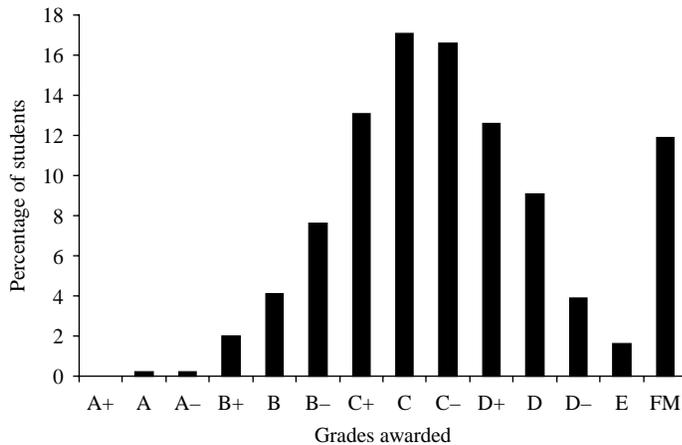


Figure 4. GEOG 10030 module results in 2005/2006

traditional approach. However, on the contrary, we also see that students who failed to engage were penalized by the blended approach, which demanded more of them on a more regular basis.

Another pattern of note was that within the first two weeks of the module beginning, almost 60 students withdrew from the module. This is higher than the previous year and higher than other geography modules on offer in the same semester. While it is difficult to pinpoint the reason, it may be reasonable to assume that for many students, the challenges of the blended learning approach were considered too difficult to meet or that students did not wish to put in the extra and more regular effort which this module demanded from an early stage. The other key issue was that close to 30 students registered to the module had not logged on by the end of case study 1, one-quarter of the way through the module. To encourage these students, we wrote to them at their home postal address explaining the importance of the online component, outlining what had been missed by their lack of

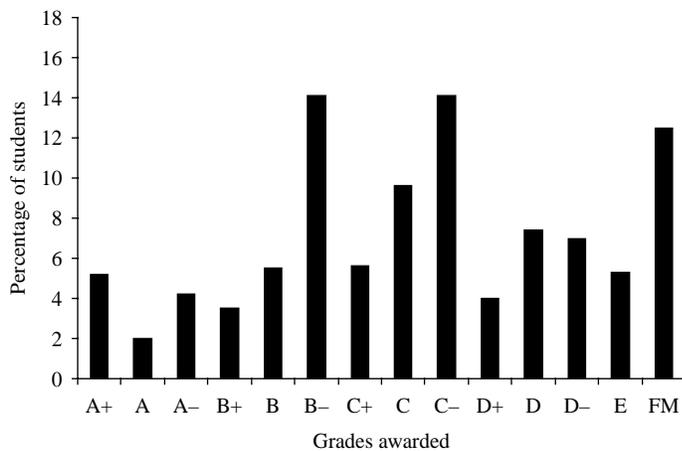


Figure 5. GEOG 10030 module results in 2006/2007

engagement and asking them to come to see us in person so we could discuss some remedial action. In the subsequent year, students were informed repeatedly in class from late semester 1 and by email over the Christmas break about the importance of the online component and encouraged to login as soon as possible. This was followed by repeated announcements in class and by email in the first week of term and the effect appears to have been overwhelmingly positive.

Conclusion

This paper focuses on the use of a blended learning approach to transform an introductory human geography module at UCD. Though the term blended learning is more often used to signify mixed methods of delivery, incorporating online and face-to-face interactions, we believe it has broader application. In particular, we see blended learning as a collaborative approach that involves students, tutors and teachers at design and implementation stage across a range of delivery media. In this way, our understanding of blended learning extends beyond the media used to incorporate all aspects of, and inputs into, the learning process.

The original impetus for the transformation of the module came from a combination of factors, including institutional concerns about student engagement and retention, and our concerns about the structure, content and learning outcomes of our original first-year module. Our findings support studies elsewhere that the constructive alignment of assessment with learning goals is crucial to student engagement (Biggs, 1999; Jackson, 2002). However, we did discover during our reflections that students had not read as much academic material as we would have liked. For future years, we will encourage more reading through the provision of links to journal articles and the incorporation of key readings into assignments to encourage engagement beyond just basic web resources. Our findings also show the importance of social interaction, with peers and with tutors and staff, for student engagement. This clearly demonstrates the significance of the active creation and maintenance of communities of enquiry for effective student learning (Garrison & Vaughan, 2008). Our widened definition of blended learning, particularly our encouragement of students as partners, facilitated this process. Some students responded very positively to this blended learning approach, and performed extremely well. For these students, the module redesign helped shift the learning experience “from a passive-centred approach to a transactional collaborative approach” (Garrison & Vaughan, 2008, p. 144), in contrast to the arguments of Oliver and Trigwell (2005). However, a higher proportion of students performed more poorly than in the original, more traditional structure, primarily because the redesigned module required continuous engagement and left no room for traditional ‘cramming’. It is clear that the blended learning approach was successful in addressing issues of engagement and deep learning, but the relationship with student retention needs further exploration.

Young (2002) has argued that successful blended learning depends on questioning given norms. We did this in a variety of ways. We broke away from the traditional twice weekly lecture format and the usual assessment strategies employed at UCD; we fundamentally changed our approach to lectures by encouraging more participation and interaction; and we adopted a ‘students as partners’ approach throughout. The delivery of the redesigned module was resource-intensive, but no more so than the traditional approach. Rather, our time was used differently, facilitated by our willingness to surrender our position as

didactic teachers and to embrace a new role as facilitators of learning. The effective use of a blended learning approach requires detailed planning, engagement with a range of professionals, and willingness to question and change accepted practices. It requires investment in module design, and in training and supporting tutors. The framing of this module as a pilot within a University LCTP facilitated these developments and provided the institutional support necessary to be as innovative as possible. However, since the module was first delivered, there has been growing international acceptance of the need to develop such modules to enhance first-year student engagement and we believe that most institutions would now embrace such approaches quite readily.

The results of our project, in terms of the experiences of both teacher and learner, mean that blended learning as a technique provides an opportunity and a useful tool to inventively deal with the challenges of student engagement posed by large class sizes. The approach also helps facilitate the achievement of key institutional objectives for research-intensive universities including the development of communities of enquiry (O'Rourke, 2007) and the laying of the early foundations for the cultivation of the "Student as Scholar" (Hodge *et al.*, 2008) ideal, while simultaneously enhancing the student learning experience.

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References

- Biggs, J. (1999) *Teaching for Quality Learning at University* (Buckingham: SRHE and Open University Press).
- Choules, A. P. (2006) The use of e-learning in medical education: A review of the current situation, *Postgraduate Medical Journal*, 83, pp. 212–216.
- Dalsgaard, C. & Godsk, M. (2007) Transforming traditional lectures into problem-based blended learning: Challenges and experiences, *Open Learning: Journal of Open and Distance Learning*, 22(1), pp. 29–42.
- Davies, J. & Graff, M. (2005) Performance in e-learning: Online participation and student grades, *British Journal of Educational Technology*, 36(4), pp. 657–663.
- El Mansour, B. & Mupinga, D. M. (2007) Students' positive and negative experiences in hybrid and online classes, *College Student Journal*, 41(1), pp. 242–248.
- Ellis, R. A., Goodyear, P., Prosser, M. & O'Hara, A. (2006) How and what university students learn through online and face-to-face discussion: Conceptions, intentions and approaches, *Journal of Computer Assisted Learning*, 22(4), pp. 244–256.
- Entwistle, N. & Smith, C. (2002) Personal understanding and target understanding: Mapping influences on the outcomes of learning, *British Journal of Educational Psychology*, 72(3), pp. 321–342.
- Felder, R. M. & Soloman, B. A. (undated) Learning Styles and Strategies, Available at <http://www4.ncsu.edu/unity/lockers/users/f/felder/public/ILSdir/styles.htm> (accessed February 2009).
- Garrick, J. (1998) *Informal Learning in the Workplace* (London: Routledge).
- Garrison, D. R. & Vaughan, N. D. (2008) *Blended Learning in Higher Education: Framework, Principles and Guidelines* (San Francisco, CA: Jossey Bass).
- Giins, P. & Ellis, R. A. (2007) Quality in blended learning: Exploring the relationships between on-line and face-to-face teaching and learning, *Internet and Higher Education*, 10(1), pp. 53–64.

- Healey, M. & Roberts, J. (Eds) (2004) *Engaging Students in Active Learning: Case Studies in Geography, Environment and Related Disciplines* (Cheltenham: Geography Discipline Network and School of Environment, University of Gloucestershire). Available at <http://www2.glos.ac.uk/gdn/active/student.htm> (accessed February 2009).
- Hinterberger, H., Fässler, L. & Bauer-Messmer, B. (2004) From hybrid courses to blended learning: A case study. ICNEE, 27–30 September 2004. Neuchâtel/Switzerland.
- Hodge, D., Haynes, C., LePore, P., Pasquesi, K. & Hirsh, M. (2008) From enquiry to discovery: Developing the student as scholar in a networked world. Keynote address at Learning Through Enquiry Alliance Inquiry in a Networked World Conference, 25–27 June, University of Sheffield. Available at http://www.miami.muohio.edu/president/reports_and_speeches/ (accessed February 2009).
- Jackson, N. (2002) *QAA: Champion for Constructive Alignment!* (New York: LTSN).
- Mohanna, K. (2007) The use of e-learning in medical education, *Postgraduate Medical Journal*, 83, p. 211.
- NSSE (2009) National Survey of Student Engagement. Available at http://nsse.iub.edu/html/quick_facts.cfm (accessed February 2009).
- O'Rourke, K. (2007) Enquiry-based learning: Collaborative learning and communities of practice. Keynote address at Inaugural International Colloquium on University Teaching and Learning, June 12, University College Dublin.
- Oliver, M. & Trigwell, K. (2005) Can 'blended learning' be redeemed? *E-learning*, 2(1), pp. 17–26.
- Plowright, D. & Watkins, M. (2004) There are no problems to be solved, only inquiries to be made, in social work education, *Innovations in Education and Teaching International*, 41(2), pp. 185–206.
- Rovai, A. P. & Jordan, H. M. (2004) Blended learning and sense of community: A comparative analysis with traditional and fully online graduate courses, *International Review of Research in Open and Distance Learning*, 5(2), pp. 1–13.
- Spronken-Smith, R. (2005) Implementing a problem-based learning approach for teaching research methods in Geography, *Journal of Geography in Higher Education*, 29(2), pp. 203–221.
- Spronken-Smith, R., Bullard, J., Ray, W., Roberts, C. & Keiffer, A. (2008) Where might sand dunes be on Mars? Engaging students through enquiry-based learning in Geography, *Journal of Geography in Higher Education*, 32(1), pp. 71–86.
- Vogel, M. & Oliver, M. (2006) Learning design tools project: Design for learning in virtual learning environments—insider perspectives. Available at http://www.jisc.ac.uk/uploaded_documents/D4L_VLE_report_final.pdf (accessed July 2008).
- Young, J. R. (2002) Hybrid teaching seeks to end the divide between traditional and online instruction, *Chronicle of Higher Education*, 48(28), pp. 33–34.

Appendix 1. Topical Case Studies Utilized in *Introduction to Human Geography 1*

From bean to cup: Global networks. This case study focuses on the story of coffee, tracing its journey from producer to consumer. Key themes such as globalization, interdependence and networks are considered through the lens of a commodity chain. Students are encouraged to develop their own research on a particular commodity and outline how it can be used to exemplify the central themes identified.

Contested places: Tara and the M3 motorway. In a country like Ireland where economic and social change has occurred so rapidly in the last decade, particular places have become key sites of conflict and debate. This case study looks at the debate over the construction of the proposed M3 motorway close to Tara, a national heritage site. Key geographical concepts addressed include place, landscape and identity, and broad questions about the relationship between heritage and economic development and the relative power of various stakeholders within major developments are investigated.

Roots and routes: Ireland and migration. Ireland's recent transformation from a place of emigration to one of immigration is considered. Key aspects include the various scales of migration and the impacts of migration on familiar landscapes. Additionally, the

migrant experience is explored through online resources and through individual interviews carried out by students with a migrant of their choice.

The Corrib gas pipeline development. In the final case study, conflicts over power and resources are investigated, with particular emphasis on the Corrib gas pipeline in Mayo. Themes such as the relationship between economic development and the environment, power and resistance are explored and students are asked to identify similar international conflicts based on territorial, resource or ideological issues.

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