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Comparing Online Learning with Blended Learning in a Teacher Training Program

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Abstract

This paper describes the establishment and delivery of a Blended Learning Higher Diploma in Education, being a professional qualification for Primary School teachers in Ireland. This innovative course represents a major departure from the traditional mode of delivery of teacher training in Ireland. A careful analysis of student feedback and examination scores is therefore of crucial importance to inform further development of the course and to contribute to innovation in teacher training both in Ireland and internationally.

The two primary modes of course delivery, that is an Entirely Online mode and a Blended Learning mode, were compared in terms of qualitative feedback from the students themselves and quantitative results from the formal assessment procedures. Across a range of questions that covered learning outcomes and learner outcome satisfaction, balance of delivery, tutor and peer engagement, workload, technology and perceived career benefit, student satisfaction was shown to be good across both modes of delivery. Some differences were noted in workload and student support; workload was perceived higher, but student support was more satisfactory in the purely online elements. There was a small but significant grade improvement for Blended Learning courses over Entirely Online courses. However, alternative hypotheses make it difficult to attribute this grade increase to the mode of course delivery.

The mode of delivery of course content does not affect student satisfaction or the ability of students to perform well in formal assessment. It is therefore concluded that a blended learning educational system that includes online education is a highly appropriate mode for the training of primary school teachers.

Introduction

Hibernia College

Hibernia College is an online College, based in Dublin, offering online and blended learning degrees to students in Ireland, the UK, and internationally. The College currently serves over 2,500 students in 26 different countries and employs over 60 full time and 300 part time staff and faculty. Hibernia College is accredited by the Higher Education and Training Awards Council (HETAC), the Irish government's agency for accrediting higher education outside of the university sector.

Prior to 2003, all primary school teachers in Ireland were trained by established Colleges of Education in full-time, onsite undergraduate and postgraduate programs. However, these Colleges were unable to provide sufficient teachers and by 2003 a shortfall of up to 2,000 qualified teachers had been identified. Hibernia College designed and developed a Blended Learning solution to help address this shortfall. This innovative new program represents the first time that online education has been the cornerstone of professional teacher training in Ireland.

Hibernia College adheres to approved Quality Assurance Standards awarded by HETAC, following scrutiny by an international review board of distinguished academics and education administrators. HETAC awards are recognised internationally and are accompanied by the EU Diploma Supplement. The Higher Diploma in Primary Education (HDPE) is a HETAC accredited qualification and recognised by the Irish Department of Education & Science for the purposes of becoming a primary school teacher in Ireland.

As can be seen in Figure 1, both applications and student numbers have risen for the program since its inception in October 2003. The program addressed a pent up demand in the initial teacher education market in Ireland which resulted in an overwhelming number of applications when it was first offered. To date almost 2,000 students have graduated from the program, which now produces more qualified primary school teachers each year than any other program in the country.

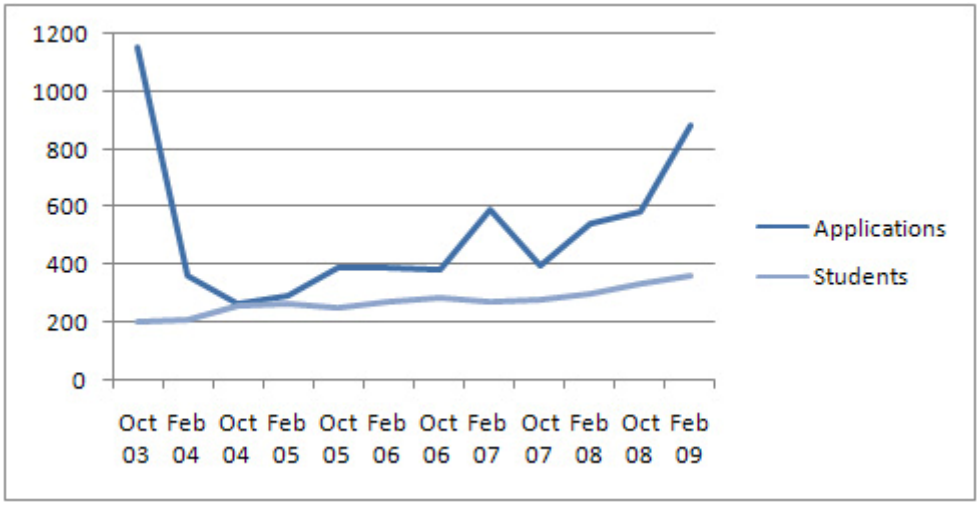

Figure 1: Student Applications and Cohort Numbers per Intake

Program Structure

In all, approximately 45% of the program is delivered online. The online elements of courses are delivered through a combination of downloadable lectures and resources, synchronous online tutorials, forums, and blogs. However, as teaching is so practical by nature, it was felt that a face-to-face element was essential to the success and quality of the program. To facilitate this, the College collaborated with the Department of Education & Science's existing network of regional education centers, ensuring that students could keep travel (and travel expenses) to a minimum.

Other essential onsite elements of the program include induction, graduation, final onsite exams, the mandatory 14 weeks of classroom teaching practice and 3 weeks spent immersed in the Gaelteacht (one of the Irish speaking regions of the country).

It is now recognised that this blended model of delivery provides a greater level of flexibility to the student in terms of managing their time and also their location (Garrison & Kanuka, 2004). It also allows for self-

paced learning in a structured environment, while student engagement and a sense of community are managed through a blend of Web 2.0 technologies implemented in the learning environment.

Lessons are released to students on a weekly basis; various learning styles are catered for through the variety of formats provided; interactive flash lessons, podcasts, and transcripts, all of which are downloadable to the student's workstation.

For an example of an online lesson click here

A corresponding synchronous tutorial usually takes place the following week.

To view a recorded tutorial click here

Students are encouraged to reflect on their learning experiences through posts in the forum based on a question posed at the end of each lesson. The tutor then leads discussions through the forums, encouraging collaboration between peers. This type of tutoring is essential to problem-based, self-directed learning, allowing the students to develop reasoning skills and become independent learners (Rovai, 2004).

Students are also provided with social networking tools such as groups, file sharing, and instant messaging that allows them to remain engaged with fellow students while not in the face-to-face environment. This helps to alleviate some of the sense of isolation that may be felt in a purely online course. "These interactions should result in increased socialization, a stronger sense of being connected to each other, and increased construction of knowledge through discourse, thus providing stronger feelings that educational goals [are] being satisfied by community membership" (Rovai & Jordan, 2004, p. 4).

Methodology

As blended learning is a relatively new approach, little study has been done to assess its effectiveness. There is a great deal of cynicism surrounding online learning and its ability to support students (Ladyshewsky, 2004). Good analysis of learner satisfaction and learner outcomes is crucial for enabling eLearning professionals to continue advances in development and implementation of blended courses (Johnson, Aragon, & Shaik, 2000).

In our study we analysed outcome data obtained from two cohorts of students (N = 441) enrolled in our Primary School Teacher Training program. Using a repeated measures design, entirely online modules of the course were compared with those that were blended. Therefore, all students partook in both conditions. Areas that were assessed were learning outcomes and learner outcome satisfaction, balance of delivery, tutor engagement, workload and technology.

Delivery Modes

The HDPE consists of 13 modules taught through a range of delivery modes as described in Table 1. In total, students spend 55% of their contact hours online and 45% in a face-to-face environment.

Table 1: Delivery Modes

	Asynchronous Multimedia Content	Live Online Tutorials in the Virtual Classroom	On-Site Face to Face Tutorials/ Workshops	Asynchronous Discussion Forum	Example Module
Entirely Online	X	X		X	Psychology of Education
Blended Learning	X		X	X	Teaching Methodologies
Entirely On-Site			X		Teachers and the Law

For the purposes of this study the following courses are classified as Entirely Online:

- Psychology of Education
- Philosophy of Education
- Sociology of Education

The following courses are classified as Blended Learning:

- Teaching Methodologies English
- Teaching Methodologies Math
- Teaching Methodologies Irish
- Teaching Methodologies Geography
- Teaching Methodologies History
- Teaching Methodologies Science
- Religion
- Physical Exercise

Independent Variable

Mode of Delivery, i.e. Blended vs. Online

Dependent Variables

In this preliminary paper, we report data derived from a sample of the questions answered by students on feedback forms. Responses were averaged across feedback returned for the three entirely online courses and, similarly, across the eight blended learning courses. Feedback was collected at the end of each semester and surveys were presented to all 441 enrolled students.

Student appraisals, assessment, and examination performance in Entirely Online courses and Blended Learning courses were compared under the following headings:

A) Clarity of Goals

B) Convenience and Workload

C) Student Support

D) Benefit as a Teacher

E) Final Grade

Results

Feedback from a total of 441 students was collected on a standardised questionnaire presented to all students at the end of each semester on 4 separate occasions, for a possible total of 1,764 surveys. Questions consisted of 5 point Likert scale items (Strongly Agree, Agree, Neither Agree nor Disagree, Disagree and Strongly Disagree) with space for open-ended feedback available (not reported in this paper) at the end of each section. Questionnaires were presented either in a paper-and-pencil format during workshops or via an online survey. The mean response rate was 28.14%, with a generally higher response rate for blended modules (34.74%) when compared with entirely online courses (21.55%)

Formal assessment data was collected for continuous assessments and for terminal examinations by the Office of Academic Affairs. This paper presents mean overall grade score in percentages for each of the dependent variables.

A) Clarity of Goals

Students were asked if the aims and objectives of the module were clearly stated at the outset and if the module content enabled them to achieve the stated learning outcomes. In each case the modal response for Blended Learning and Entirely Online courses was “Agree”. Chi-squared analysis showed that students felt that the online courses laid out course objectives more clearly, c^2 (4, N = 492) = 22.53, p <0.01; met learning outcomes more effectively, c^2 (4, N = 488) = 23.18, p <0.01; and that the methods of delivery were more appropriate, c^2 (4, N = 488) = 43.13, p <0.01 respectively. Students were also asked if the module began at an appropriate level. The modal response for both groups was “Agree”; however the level at which online courses were pitched was favoured, with a greater frequency of people responding “Disagree” for the commencement level of the blended courses, c^2 (4, N = 492, p <0.01) = 20.67.

B) Convenience and Workload

Students were asked if the workload was acceptable and, in a separate question, if the timetable was appropriate. The modal responses for both the Blended Learning courses and the Entirely Online courses were “Disagree” for workload and “Agree” for timetable. Chi-squared analysis showed workload was deemed to be higher for the purely online elements, c^2 (4, N = 488, p <0.01) = 24.30. However, despite this increased workload, students found timetabling more convenient, c^2 (4, N = 489, p <0.01) = 22.50.

C) Student Support

Students were asked if they were adequately supported by academic and administrative staff. There was a significant difference between responses in Online and Blended learning Courses c^2 (4, N = 488, p <0.01) = 31.49, with responses for online courses tending to be more favourable. Students were also asked if problems were resolved satisfactorily and if they felt supported by peers studying the course. In both cases, the modal response was “Agree” and there was no significant difference between groups, c^2 (4, N = 420, p = 0.07) = 8.56 and c^2 (4, N = 486, p = 0.29) = 4.94 respectively.

D) Benefit to Career as a Teacher

Students were asked if they felt the course would benefit them in their forthcoming career as a teacher. The modal response for courses taught through Blended Learning was “Strongly Agree”, while the modal response for courses taught Entirely Online was “Agree”. This difference was statistically significant, c^2 (4, N = 486, p <0.01) = 58.74.

E) Final Grade

196 students’ final grades, representing all students in a single cohort, were analysed. Grades were compared across course modules taught through a Blended Learning mode and those taught Entirely Online. Students consistently scored higher in course modules taught through Blended Learning. The modal increase in students’ grades achieved in these Blended Learning modules was +2 percentage points higher than grades achieved in Entirely Online courses (Figure 2). Only 15 of the 196 students obtained a lower mean score in the Blended courses. Mean score for Blended Learning courses was 59 (out of 100) ± 0.43, compared to 58 (out of 100) ± 0.45 for Entirely Online courses.

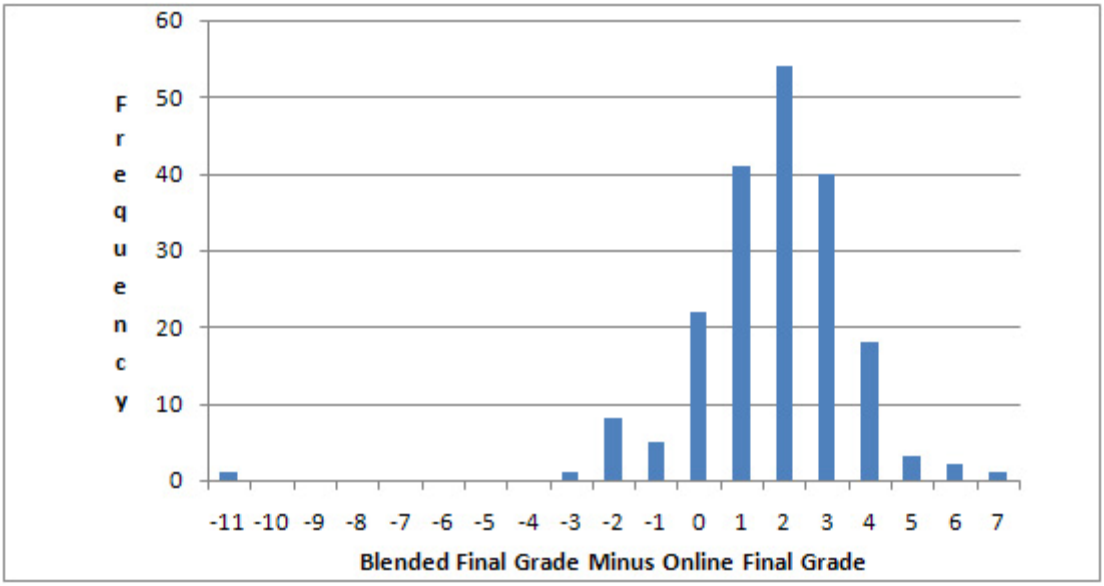

Figure 2: Frequency of Differences between Blended and Online Final Grades

Discussion

We assessed qualitative feedback and recorded final grades from students enrolled in a Higher Diploma in Primary Education. The purpose of this paper is to compare these results in course modules delivered in one of two ways; blended learning and online learning, with the hypothesis that any differences can be attributed to the mode of delivery.

There are a number of limitations that may affect the findings as reported here. A different tutor presenting each module may have had an impact on student performance and feedback as well as affecting grades through individual marking styles. However, any such effect is likely to be controlled for by the fact that a number of course modules were combined in each of the two modes of delivery, i.e. multiple tutors were involved (see Methodology). A second potential confounding factor is that the nature of the courses taught through online learning might be sufficiently different from the nature of those that are blended. For example, the online courses tended to be more theoretical in nature and less focussed on the practice of teaching.

The first dependent variable we measured concerned course goals. Students believed that aims and objectives were more clearly laid out and more effectively met by the purely online elements of their courses. This could be explained by the 24-7 availability of the online courses, meaning that students had better access to course material as and when required, thus removing reliance on the instructor. This structure allows the student to assume more responsibility for their learning, promoting self-reliance and self-directed, regulated learning (Garrison, 2003). This is also borne out by the results showing that the students believed the online courses to be pitched at a more appropriate level. The flexibility of the online model means that content can be tailored and moderated by students themselves, empowering them to learn in a manner that suits their own level of knowledge and learning pace.

Students found the online courses to be more convenient to study, reiterating the answers in previous questions, and showing that the self-led approach best suits learners. It allows them to fit their learning around their lifestyles and needs. However, it was found that the learners found this method of learning to be more time-consuming than those courses with a blended delivery. This may indicate a greater need for support in time and self-management practices for the students – useful tools when self-directing learning online (Song, Singleton, Hill, & Koh, 2004). Self-regulatory skills are paramount given the autonomy that online learning provides; students must have self-accountability to achieve learning outcomes when they have ultimate control over how and when they study (Barnard, Lan, To, Osland Paton, & Lai, 2009).

Reaction to support was more positive for the online courses. During office hours students have access to a technical support helpline, academic and administrative staff, i.e. a wider base than simply relying on a tutor. This level of support, combined with the “always-on” Virtual Learning Environment could explain student satisfaction with support provided. Out of hours the online community is a valuable source of information. Lesson content, peer collaboration in forums, online chats, blogs, online FAQs, and email all mean that students have adequate support while studying 24-7. Learner-generated content consistently grows the knowledge base of the system, as information is saved and can then be referenced by other students. Formal support from staff and informal support from peers provides comfort and encouragement while commonalities encourage participation, creating a shared educational purpose and support framework online (Moller, 1998).

Students felt that blended courses were of more benefit to them in their proposed career as a teacher. It is likely that the nature of the courses taught through the blended mode of delivery explains this difference as these courses tended to be focused on the methodologies of teaching, that is, how to teach in the classroom. In contrast, the purely online courses tended to be more theoretical in nature.

We also analysed final examination grades of 196 students in Blended Learning course modules and Entirely Online course modules. Although small (+1 percentage point), there was a statistically significant increase in final grades for Blended Learning courses as compared to Entirely Online courses. An important factor that may explain this difference is the fact that blended courses tended to be assessed via a combination of continuous assessment and final examinations, whereas online courses were assessed by final examination only. Historically, students have tended to score higher in continuous assessment elements in this program. Consequently we are not confident in concluding that the grade difference between blended and online courses can be attributed to the mode of delivery of those courses.

Conclusion

Hibernia College has designed a mixed delivery education system conforming to international best practice and accredited by Ireland’s qualifications awarding body for third-level educational and training institutions outside the university sector. Its diploma is recognised by the Department of Education for the purposes of becoming a primary school teacher. This innovative course is a departure from the traditional mode of delivery for teacher training in Ireland, that is full time, on-campus delivery. Individual course modules are delivered primarily via Blended Learning or Entirely Online.

In brief, students reported a good level of satisfaction with the learning outcomes of both types of courses, support provided, delivery, workload involved, and benefit to their future careers. These findings strongly suggest that the mode of delivery of academic content in a Higher Diploma in Primary Education does not affect students' reported satisfaction with the individual course modules. However, students did favour purely online delivery for laying out course goals, study schedules, and support. Blended delivery was perceived to be better for student workload, usefulness for future careers, and final grades.

In general, then, this paper demonstrates that both online and blended delivery of course content had positive effects on student satisfaction generally and did not affect the ability of students to perform well on formal assessments. In some cases students felt better facilitated by one mode of delivery over the other. However, it is safe to conclude that a blended learning educational system that includes online education is a highly appropriate mode for the training of primary school teachers.

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