Title of paper: Enhancing the teaching and learning experience of distance education through the use of synchronous online tutorials.

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Abstract

Oscail, Distance Education, Dublin City University is at the forefront, like many other distance education providers, in its commitment to adopting new technologies to improve the teaching and learning experience of their students (Cakir and Basak, 2004). Social interaction has been found to contribute positively to knowledge construction, higher order learning (Vygotsky, 1975 ed), achievement (Hrastinski, 2009) and successful completion (Rosenberg 2001, Salmon 2000). Advances in technology have facilitated an enhanced teaching and learning experience for distance education together with the opportunity for social interaction, an aspect often missing from traditional distance education.

Following an evaluation of several web conferencing tools, Dublin City University opted to adopt Wimba Classroom to provide live, virtual tutorials. In 2010/2011, Wimba was piloted in the Bachelor of Science in Information Technology degree programme and the outcomes of this project were reported at the 2011 EADTU conference.

Following the positive outcome of the pilot project, synchronous online tutorials were introduced to all Oscail programmes in 2011/2012. The use of Wimba was extended to include webinars, student presentations and student feedback sessions and to provide students with the opportunity to engage in social interaction and knowledge construction. This paper will reflect on the subsequent student and tutor experience of teaching and learning within Wimba. It will evaluate if the findings of the pilot project translated to the larger provision of online tutorials.

Keywords
Distance Education, Web Tutorial, Online Delivery, Wimba, Online Collaboration, Technologies

Background

Established in 1982, Oscail has provided thousands of adults with an opportunity to achieve their educational goals through the study of undergraduate or postgraduate programmes. In keeping with the principles of distance education, Oscail aims to provide students with the means in which to attain their educational goals without having to attend campus-based classes.

In addition to a small number of full-time campus-based staff, students are supported through a network of part-time writers, editors, senior academics, subject monitors, internal examiners, external examiners and programme board members.

Until recently, the main mode of academic support has been through non-compulsory face-to-face tutorials and asynchronous online support in the virtual learning environment. While the benefits of attending tutorials are significant, the numbers of students attending tutorials has declined. One of the key challenges we have faced has been ensuring the provision of quality academic support with declining student attendance.

Furthermore, the proliferation of technology within society has led to an increasing expectation and demand from students for the integration of new technologies into academia. Following the demand, from our students for the provision of online teaching sessions, online tutorials were piloted on the Bachelor of Science in Information Technology (BSc in IT) programme offered by Oscail, during the 2010/2011 academic year. The findings of this pilot were reported at the 2011 European Association of Distance Teaching Universities conference held in the Anadolu University in Eskisehir, Turkey. Following its successful implementation, the pilot was then adapted for the Bachelor of Arts in Humanities programme; online tutorials were fully integrated within all of the modules of the BSc in IT and a number of the postgraduate programmes.

The focus of this paper is the integration of online tutorials; the effectiveness of this method of teaching and learning; the experience of the teaching staff and students; and the key changes required to teach in a different mode of delivery.

Theoretical framework

Technology Changes

Changes in technology and globalisation have had a huge impact on culture and "are dissolving frontiers in education" (Harry and Perraton, 1999:1). The technological and communication revolution and advancements have reshaped the world in which we live and inevitably the nature of education. Rajasingham (2011) argues that higher education cannot be excluded from this revolution. Even the method used to find information and the way in which we communicate with other people has been reshaped by technology (Conole 2012). Information has become increasingly accessible with vast amounts of information, now being stored on the Cloud (Naughton 2012), becoming instantly available through such mobile devices as smartphones. With the assimilation of technology into the very fabric of our lives, we cannot ignore the impact this will have on education.

"Perhaps the first significant disruption caused by e-learning capabilities and approaches is in the field of distance education" (Garrison, 2003: 66). Over the past eighteen years, distance education has assimilated and been transformed by technological advances. Keegan (1996) identified technology as one of five key distinguishing features of distance education. Some forecast that traditional distance education will not feature in the education of the future (Evans & Pauling, 2010 cited in Garrison, 2011: 66) however, others challenge this viewpoint with the opinion that the future of education will rely on a modified embodiment of distance education, transformed by e-learning (Miller, 2010 cited in Garrison, 2011: 66). While the introduction of Virtual Learning Environments such as WebCT and Moodle facilitated asynchronous communication among students and tutors, the void still existed for synchronous communication. New technologies such as virtual classrooms provide distance education with the tools to deliver high quality, interactive academic support to off-campus students in an innovative and dynamic way (Cakir, 2004).

Theory

While the modes of delivery may differ, regardless of whether a course is offered online, on-campus or blended, students will use technological tools to communicate with their peers (Brooks, 2012). Social interaction is not only a powerful tool in counteracting feelings of isolation and supporting retention (Salmon 2000, Simpson 2003), it is key to facilitating knowledge construction (Vygotsky 1978, Habermas 1979).

Vygotsky claims that there is a level of attainment that we can achieve on our own but to achieve a level of deeper learning and understanding we must interact with a more knowledgeable other. This area between what we can achieve on our own and what we can achieve through our interactions with a more knowledgeable other is referred to as the Zone of Proximal Development. Vygotsky believed that it is within this zone where learning occurs. One of the challenges of distance educations has been providing the opportunities for students to interact with a more knowledgeable other, such as a tutor.

Collaboration, afforded through synchronous communication tools, amongst students is also important in building a community (Ingram & Hathorn 2004). For traditional distance education students that community is constructed within face-to-face tutorials but learning communities can also be constructed online. Institutions concerned with the online delivery of courses must scaffold interactions in such a manner as to encourage the creation of effective learning communities. Once these communities form and thrive, knowledge-building should increase (Palloff and Pratt, 2005). Tutors within an online learning environment must develop specific skills to promote, moderate and support communication and collaboration. The design and development of the course and the assignments along with skilled moderators are crucial in directing students and facilitating effective online communication and collaboration.

In an effort to promote social interaction and knowledge construction, Oscail actively encouraged tutors to make use of interactivity in their online tutorials. During the opening tutorials, tutors used the 'break-out' rooms feature in Wimba as a method to focus on community building activities (Ingram & Hathorn, 2004). These activities promote interdependence (Johnson et al, 1998) as group discussions promote the learning of all members of the group and enhance the overall knowledge base of the group.

Methodology

The student and tutor experience of using Wimba was evaluated through the use of online surveys consisting of both qualitative and quantitative questions. A mix of closed and open questions (consisting of no more than ten questions) were selected to gather information and assess students' perceptions on various aspects of the Wimba tutorials. During the 2011/2012 academic year, the survey was made available to students across all Oscail programmes, both postgraduate and undergraduate.

At the end of the 2011/2012 academic year, a separate survey consisting of seventeen questions was designed and disseminated to all tutors who were assigned online tutorial groups. The tutor survey consisted of a combination of closed and open questions.

The surveys were designed so that it would require on average no more than five minutes to complete.

The quantitative questions utilised a five point Likert scale, with responses ranging from 'strongly agree' or 'excellent' (1) to 'strongly disagree' or 'poor' (5). Results are summarised in Table format. A

value of three represent the middle position, a figure of less than 3 represents varying degrees of agreement; whereas a figure of greater than 3 represents disagreement.

Results

The MSc survey had a response rate of 39%, the BSc survey had a 34% response rate and the Humanities programme had a response rate of 33%. (The humanities survey was made available to all humanities students with over one hundred and forty responses. Only 33 of these respondents had signed up for live online tutorials and so the response rate given is for those students who were registered for online tutorials only). The average response rate to the tutor survey across the three programmes was 63%.

Student survey

Question 1: Do you have broadband access at home?
The majority of students in all programmes had broadband access at home. The most common form of broadband access for BSc student was fixed line (27%), with wireless for both MSc students (52%) and BA students (49%).

Question 2: If you have broadband, what is the (nominal) download speed?
The majority of students on all programmes had a download speed of between 1-5Mb.

Question 3: Please indicate you travel distance from DCU?
Across all programmes, the majority of respondents reside within 30 kilometres of a university (In the case of MSc and BSc respondents this is DCU). Distance may not be an issue to this cohort of students, but due to the flexibility of distance education, it is still the preferred mode of study. The flexibility provides access to the students who not only live in a remote location and do not have access to part-time/evening course provision but also the students with work and family commitments who cannot attend existing part-time/evening courses.

Question 4: How many Wimba live classroom tutorials have you attended this academic year?

Table 1: Number of Wimba tutorials attended

Tutorials	0	1	2	3	4	5	6	>6
MSc	6(14%)	6(14%)	5(12%)	21(50%)	2(5%)	1(2%)	0	1(2%)
BSc	11(12%)	10(11%)	9(9%)	9(9%)	15(16%)	11(12%)	6(6%)	24 (25%)
BA	7 (21%)	2 (6%)	3 (9%)	5(16%)	6 (18%)	3 (9%)	1(3%)	6 (18%)

The rate of attendance at online live tutorials varied across programmes with 50% of MSC and 25% of BSc respondents indicating that they attended the maximum number of live online tutorials, at the time of the survey. However, on the humanities programme only 3% of respondents indicated that they had attended the maximum numbers of tutorials available. It should be noted that from the responses it was clear that there was confusion in relation to the distinction between 'live tutorials' and 'archived sessions' as some respondents indicating they had attended more tutorials than the maximum provided.

Question 5: Did you experience any problems connecting to or using Wimba?
The majority of students did not experience any issues in connecting to or using Wimba. 23% of MSc students and 33% of Humanities students reported that they had some problems in either

connecting to or using Wimba. However, 63% of BSc students indicated that they experienced problems.

The main issues related to using Wimba rather than connection issues with the most common issues relating to the use of laptop speakers and in-built microphones in laptops.

40% of tutors indicated some issues connecting to Wimba with only 25% experiencing problems when using the online tutorials.

Question 6: Have you accessed the Wimba archive?
80% of respondents from the postgraduate and BSc programmes together with 64% of Humanities students had accessed the Wimba archive.

Question 7: Have you any comments you would like to make on your experience of Wimba-based tutorials?
The majority of students reported a positive experience of using Wimba but stated that they had been made aware of the possibility of potential issues with the introduction of a new system. The types of issues reported by students can be grouped within five main themes: technical, timetabling, archive, content and collaboration.

Sound quality was the main technical issue with students reporting that slides occasionally did not synchronise with the voiceover and there were some instances where students experienced time delays. In conjunction with low bandwidth issues, the web camera intermittently caused problems. However, a number of students stated that they would still prefer to retain the use of the camera as they felt they wanted to be able to see the tutor and their fellow students. They also felt the camera encouraged a more interactive environment.

> *'I think seeing someone on screen during the tutorial can keep you interested and makes the tutorial feel much more interactive. '(Humanities, Student)*

The BSc students reported an issue with the timetabling of the online tutorials, with many students expressing concern with the 18.30 start. Many students felt this start time did not allow students to travel from work and interfered with a crucial part of family time, mainly dinnertime and bedtime for children. Across all programmes, students stated that they would prefer more frequent tutorials.

The most popular feature of the online tutoring system was the archive. Students felt that the archive was a valuable learning resource which allowed them to review tutorials that they missed which enabled students to manage the pace of their learning and their own schedule.

> '*Downloading the archives is very useful, as it gives me the ability to structure my own time' (BSc Student)*

The main issue in relation to the delivery of the content of a tutorial, across all programmes, was students did not find it effective if tutors read their notes online rather than engage the students in a discussion.

> *'I think it is a fantastic idea but I think the tutors who use this need to try and make it as interactive as possible in addition they need to input their own thoughts and ideas..'(MSc Student)*

The collaborative aspect of Wimba was an important element for the students even when students reported some issues in relation to sound quality.

> *'I've used the Wimba classroom several times for collaborative work and it worked well, however, when 2 are [sic] more people are speaking at the same time the echo and feedback are quite off-putting.' (BSc Student)*

New students on the postgraduate programmes were urged to organise student study groups and to arrange study sessions through Wimba. Students reported that they found this very useful for their studies. Second year students did not actively engage with Wimba unless specifically directed to a tutorial session.

Question 8: How would you rate your overall experience of participating in a tutorial via Wimba?
The majority of students across all programmes reported either an 'excellent' or 'good' experience of using Wimba with 44% of MSc, 54% of BSc and 46% of BA students indicating a positive experience of using Wimba.
Overall breakdown as follows:

Table 2: Overall experience in the participation of Wimba tutorials

	Excellent (1)	Good (2)	Neutral (3)	Not Good (4)	Poor (5)	Value
MSc	3	14	13	7	2	2.7
BSc	16	32	22	14	5	2.5
BA	8	10	13	2	6	2.7

Question 9: Which of the following options would you choose for tutorial support in the future?

Table 3: Preference for the future provision of tutorials

	BSc	BA	PG
All tutorials face to face	13%	48%	N/A
Half tutorials face to face (in DCU) and half online	60%	29%	N/A
All tutorials online	27%	24%	N/A

While 48% of humanities students indicated that they would prefer future tutorial provision to consist of face-to-face tutorials only, the majority of humanities students indicated that they would like some form of online classroom to be integrated into future tutorial provision. The majority of BSc students (60%) indicated that they would prefer a blended form of tutorial provision in the future. As the postgraduate programmes are delivered entirely online, the above question was irrelevant to this group of students.

It is important to note that the results of this survey indicate that the majority of students on the BSc and BA programmes would prefer to retain some element of face-to-face tutorial provision.

Question 10: Have you any suggestions on how Oscail could make better use of Wimba?
The main area that students suggested would enhance the experience of online tutorials was enriched collaboration amongst student.

'Find ways to ensure students participate in the live sessions'
'Develop and encourage methods for collaboration between students'

Tutor online survey

Once the tutors resolved some initial technical problems with the connection they did not report any issues in using Wimba. The feature which was of most benefit to the tutors was the eBoard. Tutors reported using this feature for the delivery of presentations. The feature of least advantage to the tutors was the Apps Sharing function. One possible reason for the unpopularity of this feature was that tutors reported problems in connection when using Apps Share. This disruption in the connection impacted on the sound quality.

One of the main differences tutors reported was the level of preparation required for the online tutorial compared to the traditional face-to-face tutorial. Tutors reported that there was an increased level of preparation required for the online tutorials with some tutors indicating that they felt they needed to 'script' their tutorials for online delivery.

Tutors also reported that the type of interaction with students was different within the online tutorials than within a classroom-based face-to-face tutorial. Compared to the face-to-face tutorials, tutors felt that Wimba enhanced the learning experience of the students and that their own tutoring was enriched.

Tutors indicated that they preferred the shorter timeframe of the online live tutorials compared to the longer duration of the face-to-face tutorials. Online live tutorials were schedule for ninety-minute slots while face-to-face tutorials have a three-hour time slot.

One tutor reported that some students in his group reported that they found it easier to ask a question within the online tutorial rather than at the face-to-face session.

The majority of tutors reported a positive experience of using Wimba (Likert value – 2).

Some useful suggestions for future use of Wimba were as follows:

- Invite guest speakers to talk on topics for the course
- Bigger groups might ensure more attendance at live sessions
- Remember to use student names to help make it a more personal experience
- Practice with the eboard tools (advice for new tutors)

Discussion

Distance education students tend to have numerous demands on their time (Simpson 2003, Salmon 2000). The fundamental reason for these students in choosing distance education revolves around their inability to attend traditional university based or part-time/evening lectures. However, these reasons can also impact on a student's availability to attend a live online tutorial. A major motivation for the introduction of online tutorials was due to the low attendance at face-to-face tutorials (Walsh et al, 2011). The archival of online tutorial sessions was a key deciding factor for a number of students who were unable to attend face-to-face tutorials and indeed for those students who could not attend either the face-to-face or online live tutorials. While the attendance rates in some of the online live sessions was low, maximising participation in the live online tutorials could result in a more dynamic and engaging learning environment.

It is evident that the most valuable feature of the online tutorials was the archived sessions of live tutorials. This feature was not only a prized resource for those who could not attend the tutorial but also served as an indispensable revision resource for all students. For the student who could not attend the live online tutorial, the archive can be accessed at a time and location that fits their schedule. The benefits of this feature are hugely important to the distance education student.

Similarly, the archive feature was hugely beneficial for tutors, however, this tool was utilised by tutors in a different manner. Comparable to microteaching, the main advantage of the archived sessions for the tutors was the ability to review their own teaching style, which they felt provided them with an insight into how to improve the quality of their future tutorials. Some of the tutors felt that one of the disadvantages of the archiving feature was that it discouraged some students from

participating in the live tutorial. The lack of participation impacted on the richness of tutorial discussions. Tutors felt that some additional benefit needed to be emphasised to encourage students to 'attend' the live tutorial and to participate in the online discussions.

Improved access to and cheaper broadband has been an important deciding factor for the introduction of online live tutorials by Oscail. The majority of students and tutors have access to broadband and therefore the current environment has enabled the smooth delivery of online tutorials.

While the user experience was mostly positive, amongst students and tutors, it was apparent that the majority of students still felt that they would like some face-to-face contact with their tutors and peers during their studies. Whereas some tutors felt that tutorial discussion and engagement was better facilitated in a face-to-face setting, a number of tutors felt the opposite and indeed felt that the level of engagement and interaction was enhanced within the online tutorial. One of the key challenges faced by Oscail has been decreasing attendance rates at tutorials, especially in the non-Dublin based tutorial centres (Walsh et al, 2010). While on some programmes the attendance rate was on par with the level of attendance at the face-to-face tutorials, there was a particular issue with attendance rates on the humanities programme. This may have been as a result the students' perception of the purpose of the online tutorials. While there are no face-to-face tutorials for the postgraduate programmes and tutorials in Dublin only for the Information technology students, tutorials had traditionally been provided in a number of non-Dublin based centres for the humanities programmes. Also, the online tutorials for the postgraduate and undergraduate information technology students was built into the main delivery of tutorials, the provision of online tutorials on the humanities programme was supplementary to the face-to-face delivery. Therefore the motivation for humanities students compared to the other Oscail students may have been different. Humanities students may have opted for online tutorials in preference to not being able to attend face-to-face tutorials in Dublin, solely for the benefit of access to the archived tutorials.

In general, accessing and using Wimba was relatively easy. However, the information technology students indicated a higher level of concern in using Wimba. The main reported concern focused on the sound quality especially when using laptop speakers and built-in microphones. While students were in general content to deal with technical issues on their devices, they were less lenient if a tutor experienced a connection issue and indeed regarded their own experience as problematic when in fact the problem was with the tutor connection and not their own.

Online live tutoring altered the teaching style required by our tutors. The duration of tutorials needed to be shortened as tutors felt that it was a more concentrated environment which required a more encompassing delivery from the tutors. These tutorials were more demanding of the tutors in that they constantly had to engage with the students as the tutors could not 'read' facial and body expressions.

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