

Appendix five: publication five

PEACOCK, S., MURRAY, S., DEAN, J., BROWN, D., GIRDLER, S. and MASTROMINICO, B., 2012. Exploring tutor and student experiences in Online Synchronous Learning Environments in the Performing Arts. *Creative Education*. vol. 3, no. 7, pp. 1269-1280.

Aim of the paper

The paper explored whether, and in what ways, OSLEs support learning in the performing arts in blended learning programmes through the tutor and student lens.

Accessed online and/or downloaded	Citations	Impact factor of journal
989 downloads 2,435 views (Information provided on journal website at: http://www.scirp.org/journal/Home.aspx?IssueID=2305)	2 citations (Information provided on journal website at: http://www.scirp.org/journal/papercitationdetails.aspx?PaperID=24845&JournalID=136	Google impact factor of 0.49.

Approval from publisher for inclusion in PhD

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Background to the Research Project basis of the publication

Title

An exploration of learner and tutor experience in using online synchronous learning environments across disciplines within the School of Drama and Creative Industries.

Aim of the Research Project

To investigate whether, and in what ways, tutors and learners engage with online synchronous learning environments (OSLEs) such as Wimba and Illuminate to further understandings of the role of OSLEs in learning.

The Research Team

I was the lead researcher supported by Dr. Murray. The tutors were Mr J Dean; Mr D Brown; Mr S T Girdler, and Ms B Mastrominco.

Date research undertaken	Affiliation
The project was conducted between October 2009 and June 2010 with a further year for dissemination and writing of the final report.	Funded by: UK PALATINE, the Higher Education Academy Subject Centre for Dance, Drama and Music

Overview

By 2009, it was apparent that QMU was implementing heavily blended professional programmes, many of which resulted in students and tutors spending very little, if any time, f2f. Many learners in the health professions were on extensive work-practice placements, often as a requirement by professional bodies, gaining working experiences in locations such as hospitals in the Highlands and Islands. Business and drama students were spending extensive amounts of time in work environments to improve employability. At the same time, tutors, balancing life-work commitments, were often removed from the physical campus. In order to bridge the 'distance gap' and retain contact with their learners, tutors were exploring synchronous online learning options such as Skype and equivalents. The drama department, frequently early adopters of learning technologies, was spearheading such initiatives.

The project focused on three programmes where the OSLE was being used for master's supervision, the provision of feedback on rehearsals, and pastoral support. The last two of these cases were at undergraduate level and, the first, at postgraduate. Data were collected through online questionnaires, online interviews and video diaries. An iterative process was undertaken similar to other publications in this thesis (one and three and the sister publication for four).

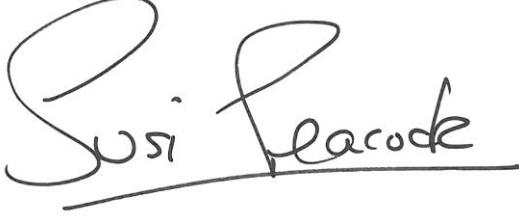
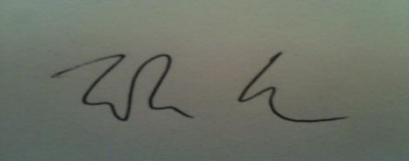
I introduced and supported the academic staff when using the OSLE. Dr Murray and I designed the inquiry process. Dr Murray conducted the interviews and Dr Murray and I analysed the data to facilitate cross-checking. In the second phase of the analysis, I re-visited the data and looked for key themes that resonated with the three elements of the CoLF.

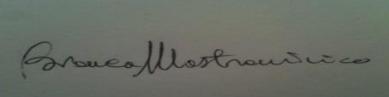
Shared outputs of the inquiry process (dissemination)																			
Project blog https://eportfolio.qmu.ac.uk/viewasset.aspx?oid=132235&type=blog	Project website http://www.qmu.ac.uk/palatine																		
Throughout the project there were on-going presentations to the learning technology community and the subject specific community (drama and performing arts). These are detailed at: http://www.qmu.ac.uk/palatine/dissemination.htm																			
Pictorial representation of research methods <table border="1"> <thead> <tr> <th>Research Method</th> <th>n</th> </tr> </thead> <tbody> <tr> <td>Student online questionnaires</td> <td>5</td> </tr> <tr> <td>Tutor online questionnaires</td> <td>3</td> </tr> <tr> <td>Tutors' online interview</td> <td>4</td> </tr> <tr> <td>Student online interviews</td> <td>5</td> </tr> <tr> <td>Interviewers' notes</td> <td></td> </tr> <tr> <td>Researchers' reflections</td> <td></td> </tr> <tr> <td>Student video diaries</td> <td>3</td> </tr> <tr> <td>Tutor video diaries</td> <td>4</td> </tr> </tbody> </table>		Research Method	n	Student online questionnaires	5	Tutor online questionnaires	3	Tutors' online interview	4	Student online interviews	5	Interviewers' notes		Researchers' reflections		Student video diaries	3	Tutor video diaries	4
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Authors' contributions to submitted publication five

55% by Susi Peacock	I was the lead author establishing the structure of the article, contributing to the literature review on e-learning and the CoIF, drafting the paper, writing the discussions, and the conclusion. I also provided feedback on the method and data analysis sections.
40% by Dr Murray	Dr Murray drafted the sections on system, method and data analysis and the literature review on e-learning. She provided feedback on all of the other sections of the paper.
5% by Mr Dean, Mr Brown, Mr Girdler and Ms Mastrominico	The tutors provided feedback on the paper.

Signatures

Susi Peacock		03/04/2015
Dr S Murray		05/05/2015
Mr J Dean		13/04/2015
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Ms B Mastrominico		13/04/2015

Exploring Tutor and Student Experiences in Online Synchronous Learning Environments in the Performing Arts

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High levels of student dissatisfaction and attrition persist in blended and online distance learning programmes. As students and tutors become more geographically dispersed with fewer opportunities for face-to-face contact emergent technologies like Online Synchronous Learning Environments (OSLEs) may provide an interactive, connected learning environment. OSLEs, such as Blackboard Collaborate and Adobe Connect, are web-based, computer-mediated communication programs typically using video and audio. This article reports the findings of an exploratory, nine-month study in the performing arts in which tutors used an OSLE for dissertation supervision, pastoral support and performance feedback. Garrison & Anderson's (2003) Community of Inquiry (COI) framework was used as the basis for evaluation of student and tutor experiences to explore in what ways learning could be supported when using the OSLE. Our findings indicate significant benefits of OSLEs including convenience, immediacy of communication and empowerment of learners, even for our rehearsal-based case study. For students, it was important to see and talk with each other (peers and tutors), share and discuss developing ideas and check understanding through the video and audio media. Tutors reported that OSLEs required them to re-think the design of the learning environment, re-visit how they facilitated discourse and re-examine their communication skills especially with regard to feedback on student performance. Technical limitations such as poor quality audio and video, lack of system robustness, and the need for turn-taking did impact on learning; however, it was accepted that OSLE-technology was improving, and rapidly so. Despite the limitations of the study, the evaluation using the COI framework demonstrated that learning had been supported and that use of an OSLE could support all three elements of the framework: social, cognitive and tutor presence. Also, it was apparent that the tutors and most of the students were extremely committed to using the OSLE believing it offered a lively, personal and dynamic learning space.

Keywords: Online Synchronous Learning Environment; Community of Inquiry; Virtual Classroom;
Performing Arts

Introduction

Drivers for encouraging use of an online web-based environment for synchronous communication such as Blackboard Collaborate, Adobe Connect and Skype within higher education are social, political, economic, and environmental (Laubach & Little, 2009; Cornelius & Gash, 2012). The higher education student population in many countries, including the United Kingdom, consists of a diverse demographic at any time including school leavers, distance learners, part-time learners and mature learners, as well as international students. All learners have competing demands on their time, such as work, family and/or caring commitments, which they need to manage alongside their studies. In addition, many learners are required to undertake a work-practice placement as part of their higher education experience frequently involving being physically located at a distance from their institution. Tutors within higher education are also facing lifestyle changes, with many now job-sharing or balancing professional and academic responsibilities, as well as supporting students based outwith their institution (full or part-time). These factors increase the challenge

of maintaining learning support and communities of learners when either the students and/or the tutors are away from the institution. Appropriate and flexible methods of providing access to learning environments for this ever-changing, highly mobile student profile are thus essential. Traditional methods such as face-to-face lectures and seminars are, in many cases, no longer appropriate (Laubach & Little, 2009).

More sophisticated, flexible, robust and accessible learning technologies such as managed learning systems, ePortfolios, wikis, blogs, e-assessment and e-submission systems are now widely embedded within the curriculum in the tertiary sector (Browne, Hewitt, Jenkins, Voce, Walker, & Yip, 2010). Predominately used for supporting information delivery and asynchronous communication in blended and distance learning environments, the advantages of these learning technologies have included: convenience and flexibility; enabling students to fit learning around work and external commitments; and affording learners more time to reflect when participating in online discussions about complex issues (JISCinfoNet, 2012). Sometimes student engagement and interaction may increase with online

learning (Rogoza, 2007; Falloon, 2011). However, notable challenges persist. As demonstrated by the numerous case studies conducted in this field, use of online and blended learning environments can lead to: higher levels of student attrition; lower levels of engagement; limited motivation; student frustration and feelings of isolation (Porto, 2006; Butler & Sullivan, 2007). This has resulted in many students avoiding heavily blended or completely online distance learning programmes and taking them only when there is no practical alternative (Porto, 2006; Rogoza, 2007; Butler & Sullivan, 2007; McBrien & Jones, 2009). Use of video conferencing has had some success in addressing such issues but sophisticated, expensive equipment is required as well as training and on-going support (Laubach & Little, 2009; Abbass et al., 2011). Synchronous learning may offer a viable alternative especially with its focus on interaction and emphasis on promoting student engagement in the learning process (Skylar, 2009; Falloon, 2011). It may be particularly useful for those subject areas where communication through speech and body language are required as in rehearsal-based areas like performance arts.

This paper explores whether, and in what ways, OSLEs support learning in the performing arts in blended learning programmes. It also seeks to provide a snapshot of student and staff experiences of OSLEs. The evaluative tool used to frame the findings and discussions is the Community of Inquiry framework. The paper will be of interest to a wide ranging audience within the field of higher education in general such as, tutors, placement supervisors, subject mentors, educational technologists, staff developers, learning technologists, support staff, researchers, and also students. It is particularly relevant as OSLE-adoption moves from initial enthusiasts to institution-wide implementation (Falloon, 2011).

Background

Studies are emerging which report on the use of synchronous learning in higher education for both online distance and blended learning (Falloon, 2011). Much of this work has focused on using chat-type tools within or outwith an institution's virtual learning environment. However, as technologies have advanced, more case studies and exemplars of using synchronous communication are appearing. Such technologies can provide an online learning environment with audio and video functionality, as well as communication tools such as hand raising and voting, and opportunities for group break-outs, creating an online classroom where communities of learners could thrive. This study focussed on embedding an online synchronous learning environment (OSLE) within blended learning programmes in the subject area of performing arts.

What Is an Online Synchronous Learning Environment (OSLE)?

Typically an OSLE consists of hardware and software components which support auditory, visual and textual channels of communication through Voice over Internet Protocol (VoIP), as well as providing functionality to use digital materials for the purpose of sharing and discussing in a range of learning and teaching settings. For example, it is anticipated that an OSLE facilitates use of word processed documents, spread sheets, presentations, images, web-based materials and video recordings (see **Figure 1**). In most cases, due to technological limi-

tations, voice communication is not usually spontaneous but speakers must wait their "turn" to participate in the dialogue: the real-time communication is limited to one voice talking at a time. Carbonaro, King, Taylor, Satzinger, Snart and Drummond (2008) compared this with the Aboriginal sharing circle where a talking stick is used. An OSLE is accessed through Internet browsers such as Internet Explorer, Firefox, Chrome or Safari. The most commonly used commercial products for education are Blackboard Collaborate (which has recently brought together Illuminate and Wimba), Webex and Adobe Connect. Such tools have been developed with group collaboration in mind allowing multiple video feeds, shared workspaces (break-out rooms) and group decision-making tools like polling.

Online synchronous learning environments have been referred to as web conferencing, webinars, webcasting or virtual classrooms amongst others. Underlying such terms is the idea of providing a face-to-face classroom-like environment online (Chatterton, 2010). However, de Freitas and Neumann (2009) prefer the term "synchronous audiographic conferencing" which they consider to be more neutral. For the purpose of this study we use the term "OSLE" and define it to be:

a web-based, computer mediated communication (CMC) program, which enables any combination of learners, tutors, and subject experts to meet "virtually", in "real time", for the purpose of natural interaction and shared communication, in respect of a learning activity (Peacock, Murray, Girdler, Brown, Dean, & Mastrominico, 2011).

Our emphasis is on interactive learning rather than using these tools in a broadcast mode for presentations and transmission modes of teaching. We accept that the tools may be used in this way and in a broader way for e-administration, marketing (DiMaria-Ghalili, Ostrow, & Rodney, 2005), and research but this was not the focus of our study. However, like de Freitas and Neumann (2009), we accept that our proposed term, like those associated with learning with technology in general, is still very much "under discussion".

Online Synchronous Learning Environments in Higher Education

A wide variety of case studies investigating the use of OSLEs have emerged over the last few years. These are at both post and undergraduate levels and are typically in Canada

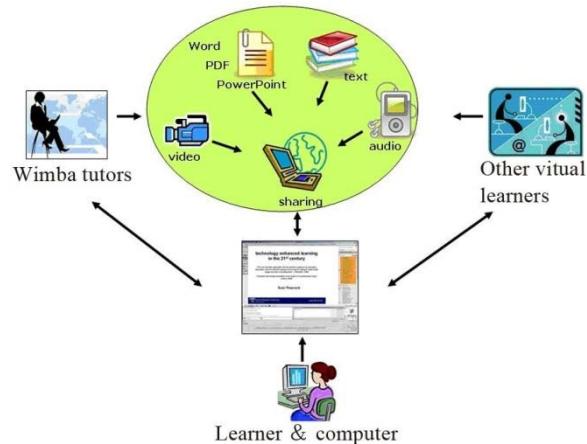


Figure 1.

Example of communication opportunities via an OSLE.

1 (Abbass et al., 2011; Carbonaro, King, Taylor, Satzinger, Snart,
 2 & Drummond, 2008) Australia (Rushle & Loch, 2008) and the
 3 United States (Abbass et al., 2011; DiMaria-Ghalili, Ostrow, &
 4 Rodney, 2005; Laubach & Little, 2009; McBrien & Jones, 2009;
 5 Dammers, 2009). Such studies have focussed predominantly on
 6 supporting distance learners in remote geographic locations
 7 (Abbass et al., 2011; DiMaria-Ghalili, Ostrow, & Rodney, 2005)
 8 but blended learning examples are now appearing (Carbonaro,
 9 King, Taylor, Satzinger, Snart, & Drummond, 2008; Laubach
 10 & Little, 2009; McBrien & Jones, 2009). There are also a few
 11 examples in which an OSLE is used to connect learning for
 12 face-to-face and distance students. In such cases, some students
 13 are situated physically with the tutor whilst others online are
 14 connected from either a different campus or from their home
 15 (Laubach & Little, 2009). OSLE case studies are in subjects as
 16 diverse as: psychotherapy (Abbass et al., 2011); nursing (Di-
 17 Maria-Ghalili, Ostrow & Rodney, 2005); education (McBrien
 18 & Jones 2009); health (Carbonaro, King, Taylor, Satzinger,
 19 Snart, & Drummond, 2008; Valaitis, Akhtar-Danesh, Levinson,
 20 & Skylar 2009, & Wainman, 2007); sociology (Laubach & Little,
 21 2009); mathematics (Skylar, 2009); psychology (McBrien &
 22 Jones, 2009); and music (Dammers, 2009). Usage is varied,
 23 ranging from online tutorials, seminars and lectures, to sup-
 24 porting mentoring, coaching and virtual office hours, as well as
 25 providing access to guest speakers (Chatterton, 2010).

26 In the case studies mentioned previously, learners reported
 27 finding OSLEs very convenient, improving access to study,
 28 reducing travel time (and associated costs) and having envi-
 29 ronmental benefits (DiMaria-Ghalili, Ostrow & Rodney, 2005;
 30 Chatterton, 2010; Abbass et al., 2011; McBrien & Jones, 2009;
 31 Dammers, 2009). Critically, OSLEs were perceived to offer a
 32 friendlier, warm, sociable learning environment helping to alle-
 33 viate feelings of isolation commonly reported by students using
 34 asynchronous environments. Learners particularly welcomed
 35 the opportunities for real-time visual interactive discussions
 36 with tutors and peers which sometimes lead to the development
 37 of an online learning community (Porto, 2006; Chatterton, 2010;
 38 Abbass et al., 2011; Carbonaro, King, Taylor, Satzinger, Snart,
 39 & Drummond, 2008). Students liked the opportunities for im-
 40 mediate clarification and feedback resulting in improved under-
 41 standing (DiMaria-Ghalili, Ostrow & Rodney, 2005; Ostrow &
 42 DiMaria-Ghalili, 2005; Olaniran, 2006; Skylar, 2009). Increased
 43 learner arousal, motivation, participation, interaction and
 44 engagement have been reported as well as improvements in
 45 critical decision-making and reflective skills (Porto, 2006; Fal-
 46 loon, 2011; Abbass et al., 2011). Recording of sessions was
 47 notable in supporting reflection and review at a time and pace
 48 convenient for learners (Carbonaro, 2008; Laubach & Little,
 49 2009). Students also felt using the OSLE had improved tech-
 50 nology skills (Skylar, 2009; Falloon, 2011) and confidence in
 51 communication skills in a different media (Carbonaro, 2008).
 52 Such skills could be readily applied in the workplace (Ostrow
 53 & DiMaria-Ghalili, 2005).

54 However, many technical challenges remain with use of
 55 OSLEs. These are cited all too often in the case studies and
 56 include: poor access to appropriate, reliable equipment; fire-
 57 walls limiting access to OSLEs; poor audio and video function-
 58 ality because of time lag and poor and/or variable network con-
 59nectivity; lack of institutional funding for appropriate equip-
 60 ment, software and support (Abbass et al., 2011; Laubach &
 61 Little, 2009; Butler & Sullivan, 2007; Falloon, 2011). Conse-
 62 quently, many tutors and students are online at least 30 minutes

63 prior to a session to ensure technical hitches are resolved. The
 64 impact is that many distance learners have felt more rather than
 65 less isolated.

66 Other challenges relate to the demands placed on users of the
 67 system compared with face-to-face teaching. For tutors, this has
 68 meant more thorough planning, for example, in the organisation
 69 and running of group tasks in OSLEs (Dammers, 2009; Falloon,
 70 2011). It has also challenged tutors to communicate and prob-
 71 lem solve in a wider range of subjects, including technical ones
 72 since university technical support is often not available for
 73 sessions which typically occur in the evening and at the week-
 74 end (Laubach & Little, 2009). Greater flexibility is also re-
 75 quired to adjust and cope with last minute changes due to the
 76 technology. Consequently, many tutors have fallen back on the
 77 familiar and comfortable broadcast approach to using OSLEs
 78 rather than exploiting the interactive group opportunities pre-
 79 sented by the tools (Porto, 2006; Butler & Sullivan, 2007; Chat-
 80 teron, 2010; Falloon, 2011).

81 For learners too there are challenges. Many stated that even
 82 when OSLEs did work, they missed "human interaction" —
 83 there was still a sense of distance and disconnectedness (Mc-
 84 Brien & Jones, 2009; Dammers, 2009; Chatterton, 2010). Lear-
 85 ners often found it difficult to accommodate specific times for
 86 OSLE meetings when located in different time zones (Skylar,
 87 2009; Falloon, 2011; Abbass et al., 2011) and there was a re-
 88 luctance to use OSLEs in a public place such as an Internet café
 89 (Cornelius & Gash, 2012). Furthermore, learners found it more
 90 difficult to engage in dialogue stating that they were too scared
 91 to ask questions, lacked knowledge of the subject area or nee-
 92 ded time to reflect. Such issues inhibited engagement (Falloon,
 93 2011; McBrien & Jones, 2009). Many compared the dynamic
 94 communication in face-to-face learning with that in an OSLE
 95 and found it wanting.

The Performing Arts and Online Synchronous Learning

96 "Performing arts" is an umbrella-term for subjects including
 97 performance, drama, dance and their production and manage-
 98 ment. By nature, interdisciplinary, the boundaries of these sub-
 99 jects are particularly fluid because they call heavily on a range
 100 of media, digital arts and emerging technologies (Quality As-
 101 surance Agency for Higher Education, 2007). Consistent across
 102 most courses are the challenges presented due to the rehearsal-
 103 based nature of the subject and the importance of visual com-
 104 munication. Nevertheless, like other subjects, students will
 105 spend long periods physically located away from the institution
 106 for placement experiences and also for dissertation completion.

107 There are few examples in areas related to performance. One
 108 notable example is in music when trumpet lessons were con-
 109 ducted through Skype (Dammers, 2009). The small study de-
 110 monstrated that it was indeed possible to teach at a basic level
 111 but also that there were limitations especially since the tech-
 112 nology did not support the tutor and learner playing together in
 113 time. However, it was accepted that:

114 *Synchronous online instruction is likely to expand and sup-
 115 plement music instruction but not revolutionize it.* (Dammers,
 116 2009, p. 22).

117 Videoconferencing, however, has been trialled in the per-
 118 forming arts. The ANNIE (Accessing and Networking with
 119 National and International expertise) Project utilised both syn-
 120 chronous (videoconferencing) and asynchronous environments

1 in theatre studies to support research-led teaching and access to
 2 national and international experts (Childs, 2003). Challenges
 3 included lack of gestural cues due to restricted views, time
 4 delays and the difficulty of working with large groups. How-
 5 ever, in both small and large group sessions, the level of learner
 6 and tutor concentration was elevated and tutors reported that
 7 multi-site tutoring sessions were more focused and democratic.
 8 Childs (2003) suggests that the lack of a tutor's physical pres-
 9 ence appeared to make students focus their attention more than
 10 in traditional face-to-face sessions.

11 Two other examples report use of videoconferencing for
 12 dance in rural areas. The Performance Lab (TPL) in Minnesota
 13 used elaborate set ups of equipment including fixed and hand-
 14 held cameras to enable students' movements to be filmed from
 15 a variety of angles. Students liked to "...see themselves being
 16 corrected from three dimensions" (Janson, 2004, p. 47) and
 17 despite sound delays and loss of visual signal were positive
 18 about their experiences and impact on learning (Janson, 2004).
 19 In another example, videoconferencing provided opportunities
 20 for students to interact with national specialists without having
 21 to travel away from the classroom or studio (Parrish, 2008).

Pedagogical Frameworks as Evaluative Tools to Explore Tutor and Student Experiences of Learning in OSLEs

22 Whilst case studies reviewing OSLE-usage in tertiary educa-
 23 tion have regularly appeared over the last ten years, it is only
 24 recently that pedagogical frameworks and models have been
 25 used as tools to evaluate synchronous learning environments.
 26 Most notable has been Moore's (1993) theory of transactional
 27 distance. Predominantly used in distance education, it considers
 28 the "sense of distance" and "disconnectedness" a student feels
 29 during the learning process (McBrien & Jones, 2009, p. 3). Al-
 30 though extremely illuminating as the basis for evaluation of
 31 studies, some have found this model requires re-thinking espe-
 32 cially since technologies such as synchronous online learning
 33 environments were not available when the model was originally
 34 conceived (Falloon, 2011; McBrien & Jones, 2009).

35 de Freitas and Neumann (2009) provide an extensive over-
 36 view of pedagogic strategies which have been or could be
 37 broadly applied to OSLE-type technologies. They specifically
 38 focus on the Community of Inquiry model of Garrison and
 39 Anderson (2003) with its emphasis on interaction, discourse
 40 and a collaborative constructivist view of learning and teaching.
 41 This conceptual framework has been used extensively to inter-
 42 pret findings in e-learning (Garrison, 2011). The framework
 43 proposes three elements which harness the benefits of working
 44 online (distance and blended) and address the issues of the iso-
 45 lated learner.

46 Strongly influenced by the work of Dewey, Garrison defines
 47 an online community of inquiry as:

48 *a group of individuals who collaboratively engage in pur-
 49 poseful critical discourse and reflection to construct meaning
 50 and confirm mutual understanding.* (Garrison, 2011, p. 15).

51 Garrison and Anderson (2003) believe learning and teaching
 52 to be a complex, iterative interplay between individual, per-
 53 sonal meaning making and the social environment:

54 *While knowledge is a social artefact, in an educational con-
 55 text, it is the individual learner who must grasp its meaning or
 56 offer an improved understanding.* (Garrison, 2001, p. 13).

57 At its heart, for Garrison and Anderson (2003) the educa-

58 tional experience consists of:

- 59 • The private personal experience in which the individual is
 60 constructing and reconstructing knowledge;
- 61 • The social experience in which the individual is refining
 62 and confirming their developing knowledge through dis-
 63 course with a community of learners.

64 The learning environment, as a consequence, must facilitate
 65 individual knowledge construction and meaning-making. It
 66 must also provide a supportive social environment in which di-
 67 vergent views, ideas and perspectives can flourish, be explored,
 68 investigated, reviewed, reflected upon and challenged. It is to
 69 this environment that learners must bring their emergent ideas
 70 and knowledge and discuss with other learners in the commu-
 71 nity.

72 Over the last decade, the Community of Inquiry framework
 73 has been extended and refined (Garrison & Arbaugh, 2007;
 74 Garrison, 2011). Currently the three overlapping elements
 75 which are the basis for the Framework are:

- 76 • Cognitive presence. This addresses how the learning envi-
 77 ronment supports the student to meet the learning outcomes
 78 of any educational experience. At its core is critical think-
 79 ing and reflection which allows the learner to probe existing
 80 knowledge and build upon this to develop new knowledge
 81 (Garrison, 2011). This recursive process moves the learner
 82 from a state of puzzlement to potential testing of solutions
 83 but this is not a linear process and in some cases will not
 84 lead to resolution.
- 85 • Social presence. This refers to the opportunities available
 86 for learners to present themselves as 'real' people in what-
 87 ever medium of communication is required (Garrison &
 88 Anderson, 2003). Indicators of social presence include: in-
 89 terpersonal communication, open communication and cohe-
 90 sive communication (Garrison, 2011).
- 91 • Teaching presence focuses on the design and management
 92 of the learning environment, facilitation of critical discourse
 93 and correction of misconceptions. Usually the tutor takes
 94 the lead in this presence but students too can support the
 95 teaching presence.

96 Although originating from the analysis of text-based online
 97 communication, there are now many examples of the CoI being
 98 used to understand and evaluate blended learning (Garrison &
 99 Arbaugh, 2007). We hoped the Framework would provide the
 100 basis for an in-depth exploration of the potential of an OSLE in
 101 the performing arts to support learning. The basis of the
 102 Framework—the interplay between individual meaning-making
 103 and the social environment—is highly suitable for our case
 104 studies in the performing arts.

The Study

105 The aim of the study was to investigate whether, and in what
 106 ways, tutors and learners engage with online synchronous
 107 learning environments (OSLEs), to further our understanding of
 108 the role of OSLEs in learning and to develop practical guide-
 109 lines. An in-depth, comparative study of tutor and learner ex-
 110 periences of using an OSLE was conducted in order to explore
 111 if OSLEs could enhance the learning environment for heavily
 112 blended learning courses where tutors and learners were fre-
 113 quently off-campus.

114 The study was conducted at Queen Margaret University
 115 (QMU), Edinburgh, Scotland, over a period of nine months.
 116 QMU is a small institution which gained University title and

1 moved to a new campus in 2007. Most undergraduate pro-
 2 grammes offered at QMU involve four years of study and stu-
 3 dents typically start such courses from the age of 17 years on-
 4 wards; each year of study in a programme is referred to as a
 5 level. Many of the students participating in this study were
 6 located at a distance from the institution at some stage of their
 7 programme. Similarly the tutors involved in the study were at
 8 times travelling and based away from the institution. So, al-
 9 though QMU was the physical setting for the study, in reality
 10 the OSLE itself was the virtual setting where much of the re-
 11 search data were collected.

The System

12 The OSLE used during this study was Wimba Classroom
 13 version 5 and was hosted on a server provided by Wimba in the
 14 United States of America. Wimba Classroom allows learners
 15 and tutors to log into a secure, online classroom, where audio
 16 and digital materials, such as PowerPoints, images, WORD and
 17 EXCEL documents, websites, and video clips can be shared
 18 and discussed in large plenary groups or in smaller breakout
 19 groups. Tutors and students can talk to each other in real time
 20 through the OSLE interface and can supplement this using a
 21 text chat tool. Students can indicate when they wish to ask a
 22 question, when they understand an explanation, or when they
 23 are confused, by selecting an appropriate symbol, for example,
 24 a "thumbs-up" or a "thumbs-down". A video of the speaker is
 25 shown, but it is not possible in this particular OSLE system for
 26 videos of other participants logged into the session to be shown
 27 at the same time. Sessions can be recorded and archived for
 28 later use, and either accessed through a URL or downloaded as

29 MP3 or MP4 files. **Figure 2** provides an example of the Wimba
 30 interface with a video screen in use. For all three of the case
 31 studies, students and tutors were introduced to the OSLE early
 32 in the academic calendar.

Context of Use

33 Our OSLE was trialled within three programme areas for
 34 three very different purposes, as illustrated in **Table 1**.

Method

35 This was a qualitative study and followed a mixed method
 36 approach to data collection. A collective case study design
 37 (Stake, 2000) was employed which enabled a holistic examina-
 38 tion of three very different learning and teaching contexts
 39 which were making use of an OSLE within the subject area of
 40 performing arts. Qualitative research is recognised as having
 41 the strength of generating rich data (Glazier, 1992) and it was
 42 anticipated that studying these cases in-depth would enable
 43 generalisations from our findings to be applied to a wider
 44 population (Stake, 2000; Bryman, 2001), for example, across
 45 other performing arts subject areas. Each case was selected
 46 purposefully on the basis of relevance to the focus of our re-
 47 search (Gomm, Hammersley, & Foster, 2000). To assist in de-
 48 termining relevance, tutors from five programme areas were
 49 invited to complete an online questionnaire at the preliminary
 50 stage of the project in order to gather background information
 51 about each potential case and cohort, as well as expectations
 52 regarding use of the OSLE. Three cases were selected purpose-
 53 fully on the basis of these data. Two were discounted as either

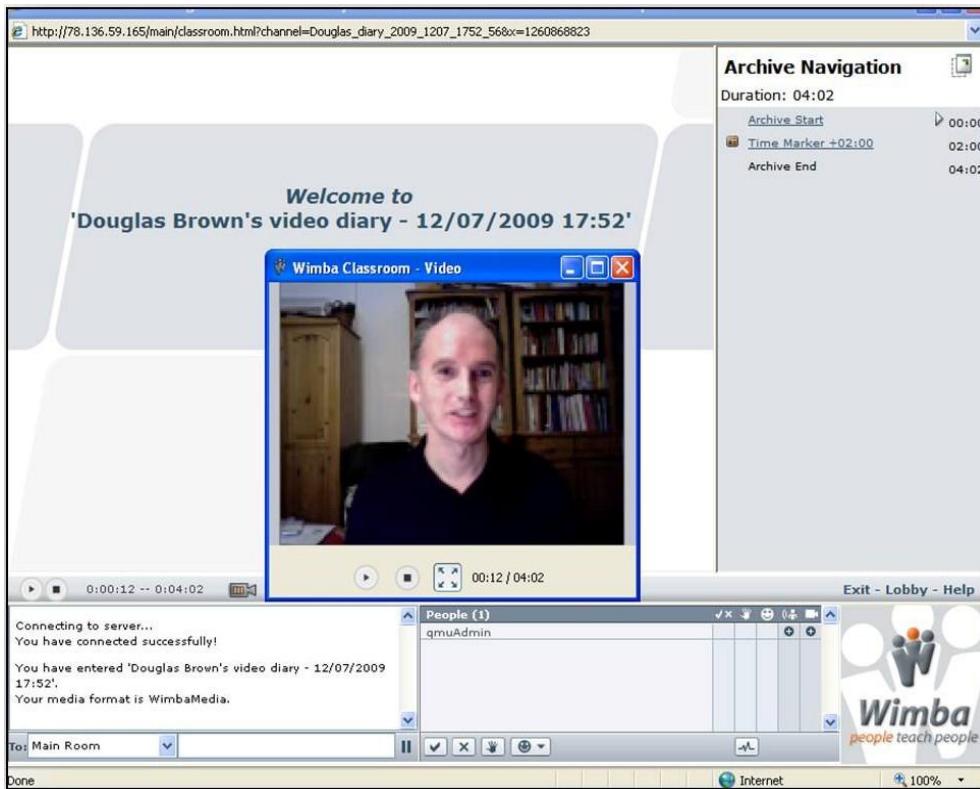


Figure 2.

Example of Wimba interface with video screen in use

1 the tutors did not wish to engage with an OSLE after further
 2 discussions and/or felt that the use of OSLE was inappropriate
 3 with most students being campus-based.

4 Ethical approval was gained from the institution. Three
 5 methods of data collection were employed in order to access a
 6 wide range of perspectives regarding use of the OSLE and these
 7 were: self-completion questionnaires, the recording of video
 8 diaries by participants, and semi-structured interviews. Prelimi-
 9 nary, background data were gathered from students and
 10 tutors via web-based self-completion questionnaires. For the
 11 tutors this related to their anticipated use of the OSLE within
 12 their programme area, perceptions regarding the benefits and
 13 limitations of using an OSLE tool, and also details of any prior
 14 experiences they may have had in using synchronous environ-
 15 ments. The student questionnaire data provided an indication of
 16 their levels of computer skills and experience of synchronous
 17 environments generally and also provided an insight into the
 18 students' perceptions regarding the introduction and use of the
 19 OSLE.

20 Tutors and students were invited to create video diaries within
 21 the OSLE about their experiences of using the OSLE. Partici-
 22 pants were requested to archive their diaries and to notify the
 23 researcher when a diary was available. It was hoped that using
 24 the OSLE to record diary accounts would be a convenient way
 25 for tutors and students to reflect on their experiences and that
 26 using the same OSLE would enable diaries to be created as
 27 soon after actual episodes of use as possible, prompting recall
 28 of particular features or issues worthy of discussion. The re-
 29 searchers anticipated that gathering audio and visual responses
 30 together in a diary form would assist them in gaining a deeper
 31 understanding of the phenomenon under investigation, as well
 32 as aiding engagement with data.

33 Interview data were gathered via the OSLE since it was con-
 34 sidered to be convenient for the researcher to meet with the
 35 tutors and students in this way for interview, particularly as
 36 several participants were away from the institution. It was be-
 37 lieved that using the OSLE for the purpose of conducting an
 38 interview would aid the participants in recalling their experi-
 39 ences of using the OSLE within the learning and teaching con-
 40 text and enable them to demonstrate ideas and opinions more
 41 easily. Also it was hoped that using this approach would assist
 42 the researcher in experiencing the environment under investiga-
 43 tion and developing an understanding of its use. Further infor-
 44 mation about using OSLEs as a research tool is available else-
 45 where (Murray & Peacock, 2012).

Table 1.

Context of OSLE use across the three case studies.

Case study	Programme and level of study	Context of use	Tutor group	Student location
1	MA Arts and Cultural Management PG level 2	For conducting mainly one-to-one tutorials and occasional group meetings between tutor and students in order to support dissertation completion.	One tutor (m)	· Greece (n = 1f) · Bahrain (n = 1f) · South Korea (n = 1f)
2	BA (Honours) Drama and Theatre Arts UG year 3	· As a vehicle for students to demonstrate performance rehearsals with peers and tutors who were away from the institution; · As an environment for tutors to provide feedback to students on their performance rehearsals – both individually and in groups.	Two tutors (1f; 1m)	· Edinburgh (n = 7) (5f; 2m)
3	BA (Honours) Performing Arts Management UG year 3	A means of providing one-to-one developmental support for students who were away from the institution on work placement experience.	One tutor (m)	· London (n = 1m) · Edinburgh (n = 2) (1f; 1m)

Note: PG = Postgraduate; UG = Undergraduate; f = Female; m = Male.

46 Participation in the research was voluntary and as **Table 1**
 47 illustrates, only a small number of students participated. Al-
 48 though all four tutors (including the two tutors in case study 2)
 49 wished to use the OSLE with their students, some students
 50 preferred the telephone and email whilst others lived near to the
 51 University and wished for a face-to-face meeting with their tu-
 52 tors. Other students used the OSLE but did not opt to be inter-
 53 viewed or to record a video diary (see **Table 2**).

54 Data Analysis

55 The data analysis was undertaken in two stages. Analysis
 56 took place as soon as possible after data were collected to assist
 57 subsequent stages of data collection.

58 First, an iterative and interpretive process of analysis was
 59 employed, enabling the value and shortcomings of using an
 60 OSLE to be identified from the tutor and student perspectives.
 61 Data were reviewed by two members of the research team to
 62 facilitate cross checking and to increase the quality and rigour
 63 of the findings (see **Figure 3**).

64 It was only later that data were interrogated again using the
 65 CoI framework for evaluation. In this case, one researcher re-
 66 visited the data collected and reviewed looking for key themes
 67 that resonated with the three elements of the CoI as undertaken
 68 in previous studies (Garrison & Arbaugh, 2007).

69 A full outline of the method and analysis is available else-
 70 where (Peacock, Murray, Girdler, Brown, Dean, & Mastromini-
 71 nico, 2011).

Findings and Discussions

72 In this section, we report the findings of the study and then
 73 discuss them in relation to the Community of Inquiry frame-
 74 work. Our study demonstrates that OSLEs can be used to sup-
 75 port learning in three diverse case studies in performing arts. In
 76 all three case studies, the tutors and students were positive
 77 about using the OSLE and about the role of the OSLE in main-
 78 taining contact between students and tutors. For example, use
 79 of the OSLE helped maintain, to some degree, the learning
 80 connection which had been established in the face-to-face
 81 meetings:

82 *I always finished the session feeling that I'd made a connec-
 83 tion. There was a certain amount of intimacy there at a dis-
 84 tance if you like and therefore it was valuable to use. (Tutor;
 85 Case study 1)*

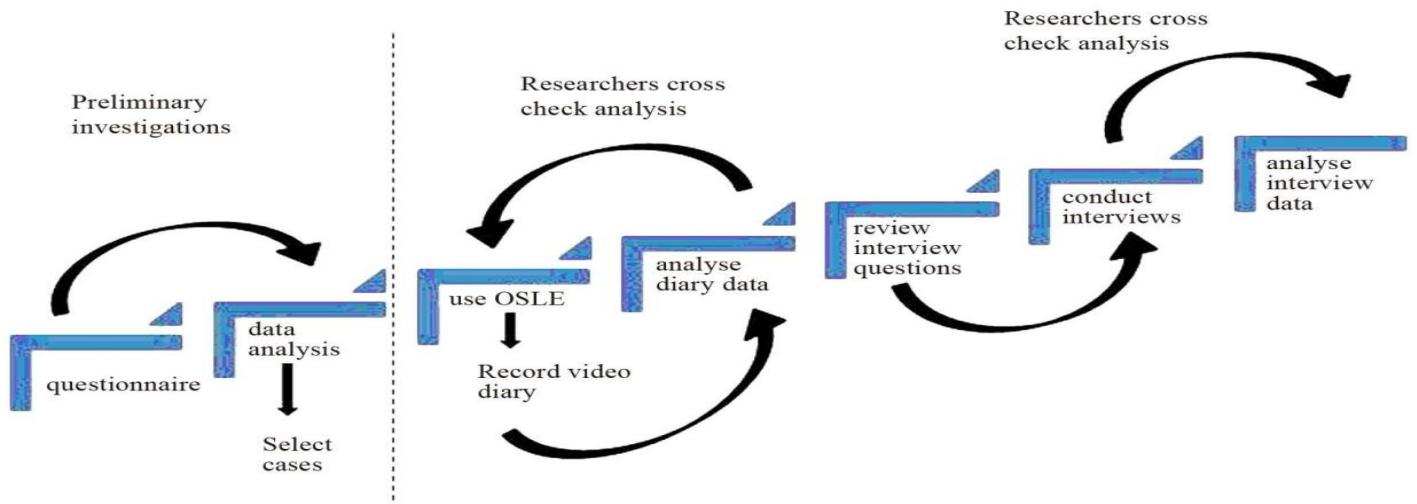


Figure 3.
Overview of the data analysis process

Table 2.

Demonstrating participant numbers for each data collection method.

	Questionnaires	Video diaries	Interviews
Tutors	n = 4	n = 3	n = 4
Students	n = 5	n = 4	n = 5

1 The participants liked using the OSLE, and this was evident
 2 from the very first sessions. They found it was an easy to use,
 3 flexible, accessible and convenient tool, providing instant visual
 4 and audio communication between tutors and students, reflecting
 5 case studies reported in the literature (Porto, 2006; Dam-
 6 mers, 2009; Abbass et al., 2011, Falloon, 2011).

7 [OSLES will] give us more flexibility. At the moment I have
 8 to fit those academic tutorials into a working day... my work-
 9 ing day can be really what I want so if a student wants to do a
 10 [session] with me at 7 o'clock in the evening, then I'm happy to
 11 do that, it's part of my working day. You know, it gives me
 12 freedom to plan my week and gives students freedom to plan
 13 those academic tutorials... It's just shifting... boundaries shift-
 14 ing, perceptions shifting. I don't see it as making work harder,
 15 making it more difficult. I see it as making things easier (Tutor 3;
 16 Case study 3).

17 Moreover, the tutors believed that OSLEs had the potential to
 18 change significantly the educational experience for them—it
 19 offered a new and more exciting way, of doing the business of
 20 education in the 21st century—it was possibly a step-change.
 21 Such findings echo case studies previously cited such as
 22 Valaitis et al., 2007; Butler & Sullivan, 2007; McBrien & Jones,
 23 2009; Reushle & Loch, 2008. The OSLE was considered to be
 24 a more dynamic, interactive, personal, student-centric, and fun
 25 learning environment, which could "free participants" from the
 26 constraints of the current physical learning environment of the
 27 campus in Edinburgh and help them to balance their varied
 28 work commitments and study/life responsibilities:

29 It's been of enormous benefit. Not only the new skills aspect
 30 of it which is enormously important, but for me as a human
 31 being and the work-life spans. It's given a completely new di-

32 mension to my working life which is quite phenomenal really...
 33 wherever anyone is in the world to be able to communicate and
 34 to teach students, to mentor students and to have that freedom
 35 away from the desk which is something we were promised for
 36 years would happen, has had a huge effect on my psyche. I feel
 37 very free, which is an extraordinary thing to say. I don't feel
 38 chained to my desk.. (Tutor 3; Case study 3).

39 All the tutors referred to the OSLE as empowering learners
 40 and perhaps providing learners with some measure of control
 41 and responsibility. In case study 2, for example, the tutors de-
 42 scribed when they first entered the online room whilst they
 43 were physically located in Italy and their students in Scotland.
 44 The tutors realised that the students had organised their physi-
 45 cal and online space, determined how they would run the ses-
 46 sion and how they would work with their tutors. Using the
 47 OSLE made the students think about how they wanted to use
 48 the tutors to meet the educational requirements for their studies
 49 and how they could engage in critical discourse with their tutors
 50 to check current knowledge and develop new understanding.
 51 This theme of empowerment, noted in other studies such as
 52 Olaniran (2006), was noticeable in the two other case studies
 53 where the tutors believed that the OSLE gave their learners "a
 54 sense of responsibility," deciding when they wanted to contact
 55 their tutors and most importantly, what they wanted to discuss.
 56 This would provide a springboard for the tutors to facilitate a
 57 critical discussion which would allow the learner to refine and
 58 confirm their developing knowledge through discourse with
 59 themselves and in some cases, other learners. However, for
 60 some learners, the tutor noted, this sense of responsibility
 61 would take longer to develop than others.

62 In some cases, as reported earlier in the literature review, the
 63 technology did impact on the learning and there was frustration
 64 at its lack of robustness and limited functionality. However, the
 65 tutors enthusiasm and commitment to using OSLEs remained
 66 throughout the study and most worked around the technology,
 67 similar to the examples reported in the study by Abbass et al.
 68 (2011), and there was an acceptance that the technology was
 69 improving significantly and quickly:

70 as the technology improves the work will reap the benefits of

1 what we've been discussing, but it's a slow start because that
 2 kind of quality holds us back at the moment (Tutor 2a; Case
 3 study 2).

4 Although tutors and students were very positive about using
 5 OSLEs, it is important for us, as educators, to know how and in
 6 what ways using an OSLE facilitates individual knowledge
 7 construction and meaning-making. What, if any, impact did the
 8 OSLE have on the students' learning? In the next section we
 9 use the three elements of the Community of Inquiry framework
 10 as the basis for our evaluation of learning in our three case
 11 studies.

Cognitive Presence

12 Not only did the instant audio and visual communication in
 13 the OSLE ensure that the strong learning connection made on
 14 campus could be maintained but this technology also facilitated
 15 dialogue for inquiry and debate which tutors felt supported the
 16 students in acquiring high-order knowledge. In two of our case
 17 studies, the tutors used the OSLE as a learning space where
 18 students could discuss with them and their peers their emergent
 19 understanding and engage in debate and sharing:

20 *Sharing... in a way that's what our conversations are about,
 21 I'm sharing my thoughts on their work and they were sharing
 22 their thoughts with me, but you can share work, you can share
 23 images, pictures and desktops. It's a place for sharing quite
 24 easily and I think for drama teachers that's probably quite a
 25 nice word to hear (Tutor 1; Case study 1).*

26 For the future, as with the video-conferencing case studies
 27 cited earlier (Parrish, 2008), it was also anticipated that use of
 28 an OSLE would improve access to, and dialogues with, experts
 29 which would allow students to interrogate and extend their
 30 existing knowledge:

31 *And I suspect this is why the project has been so fascinating,
 32 because the doors it opens ... the choices, being able to have
 33 students speaking to practitioners all over the world is phe-
 34 nomenal and I suspect that that's... I mean obviously it will be
 35 the same in business and any other aspect... health sciences as
 36 well, being able to speak to practitioners from all over the
 37 world without having to fly them in. Having that access, in-
 38 stantaneous access is pretty amazing (Tutor 3; Case study 3).*

39 The OSLE was also used asynchronously as a reflective tool.
 40 Synchronous online learning is often praised for its immediacy
 41 of response and faster pace but criticised for reducing the op-
 42 portunities for reflection, unlike text-based asynchronous
 43 communication. In case study 2, working with the archive tool
 44 in the OSLE, individual learners could revisit their recordings
 45 of performances, reflect upon these, create online reflective
 46 video diaries in which they articulated their developing under-
 47 standing and then use these as a springboard to prepare for
 48 discussions with tutors and peers. This helped the learners in
 49 the performing arts to see their work as work in progress which
 50 they would then move forward with after receiving feedback
 51 and reflection:

52 *They have to develop their work in... solitude. They're in a
 53 sort of loneliness which provides the chance for them to grow
 54 independently, so we need to look at that material maybe af-
 55 terwards... (Tutor 2b; Case study 2).*

56 The OSLE was supporting both private reflection and public
 57 discourse (Garrison, 2011) particularly through the use of the
 58 archive tool as explained by Tutor 2a:

59 *the possibility of archiving, revisiting work, storing it, going*

60 *back and being able to examine in detail, in our own time, in
 61 our own place... that's been extraordinarily valuable and has
 62 set off a train of thoughts about the potential for the future
 63 (Tutor 2a; Case study 2).*

64 In some cases, the OSLE impacted negatively on cognitive
 65 presence especially through the requirement for turn-taking
 66 when speaking. Participants compared the OSLE with Skype,
 67 where turn-taking is not required and where more spontaneous
 68 communication is supported:

69 *When I recently used Skype I found ... I didn't have to push a
 70 button—they could already hear me and it was a lot more re-
 71 lax—*it was like you are just in a room chatting instead of
 72 having to push the button down ...that way I guess I could
 73 make notes as well, instead of having to reach over and press a
 74 button—it would be a bit more relaxed (Student 5; Case study
 75 3).**

76 Tutors disliked the turn-taking and felt that they needed the
 77 same functionality in Skype where they "...could have those
 78 kinds of overlapping conversations that make human conversa-
 79 tion human." (Tutor 2a; Case study 2)

80 Precious time for peer and tutor interaction was also wasted
 81 due to the time required to prepare and log into the system:

82 *I know we've had many sessions which took us a good 15 or
 83 20 minutes just to set up things ready to use it in the
 84 room, ... (Tutor 2a; Case study 2).*

85 Also, some students and tutors found that the system was not
 86 intuitive and the interface was often described as "overwhelm-
 87 ing" resulting in less frequent use of the system. Here the stu-
 88 dent describes trying to archive:

89 *it took me a long time to figure out... how to record because
 90 it wasn't clear and as I said the tutorials didn't help because
 91 they are like half an hour long—each one of them and you
 92 don't know where the information you're looking for is because
 93 there are loads of different tutorials and it could take days until
 94 I find the information I was looking for. (Student 1; Case study
 95 2).*

96 Such technical issues limited the quality of the discourse (in-
 97 ternal and external) and impacted on learning.

98 In case study 2, where the OSLE was used for performance
 99 practice and group sessions, specific challenges emerged;
 100 however, for each issue, the tutors found benefits by addressing
 101 the challenges:

Physicality constraints.

102 It was not possible for tutors to make physical corrections of
 103 students' poses, such as moving an arm into an alternative pos-
 104 ition. The tutors initially found this restrictive as stated in the
 105 early video-conference examples (Parrish, 2008; Janson, 2004).
 106 However, after a few sessions, the tutors altered their commu-
 107 nication style and found they could demonstrate the moves
 108 through the OSLE.

109 *Constrained performance space due to the camera and what
 110 the camera could show.*

111 Tutor 2 recalls that the learners had to remember to organise
 112 their performance space for the camera. This meant that ultim-
 113 ately the students limited which aspect of their performance
 114 was recorded for feedback through an OSLE. The tutors re-
 115 minded the students that this was useful experience as they
 116 might frequently in the future be working with cameras and not
 117 performing for a live audience.

118 *Equality of communication with large groups.*

119 As stated by Tutor 2a: this needed to be considered in the
 120 planning process:

1 *If somebody isn't sitting next to the computer, say if you have
2 a group of seven, only one or two people can have their hands
3 on the talk button. If it's a discussion with us it makes life po-
4 tentially difficult if you wish to interject or how do you put your
5 hand up? Do you physically put your hand up? ...but again if
6 your colleagues are sitting in a place where they can't see
7 you... there are difficulties... (Tutor 2a; Case study 2).*

Social Presence

8 The ability to see and talk with the tutor or students instant-
9aneously was crucial for all: they could see each other as 'real'
10 people with whom they could discuss their work, their ideas
11 and their developing understanding:

12 *We felt good about the session—it was certainly good to
13 connect and see each other and speak to each other. In a way it
14 was like a phone call, but was a wee bit more personal if you
15 like (Tutor 1; Case study 1).*

16 The immediacy of the communication link allowed the tutor
17 to check directly if their message had been understood and to
18 probe further or progress the discourse as appropriate, mirroring
19 findings reported in the Annie project (Childs, 2003) and
20 Abbass et al.'s case study (2011). It seemed that the sessions
21 had enhanced the working relationship, maybe through helping
22 the tutors gain a better insight into the learners' environment
23 and getting "*a sense of their students as people*" (Tutor 1; case
24 study 1). Tutor 1 discusses the impact of talking to his students
25 when they were celebrating New Year in South Korea, or ex-
26periencing the riots in Athens; it provided him with a sense of
27 where his students were and what they were experiencing.

28 These discussions were also relevant to their area of study.

29 The facility to hear and see instantaneously also differenti-
30 ated the OSLE from other forms of communication, such as
31 telephone or email: "*it helps to use your visual senses as well
32 as just listening*" (Tutor 1; Case study 1). In most cases the
33 immediacy and visual/audio communication channels helped
34 build and maintain social presence:

35 *I can use email to ask his ideas, but when I'm using Wimba
36 he can explain his ideas ... why should I go ... how could I...
37 It's different, he can use paper and he can use the letter, but
38 when he speak to me and we seeing faces, with the smile, then
39 it's more... we're close and it's helpful using Wimba with the
40 movie (Student 3; Case study 1).*

41 Using the OSLE also helped to remind the students of working and studying in an educational environment. It removed the
42 disconnectedness often referred to in distance learning pro-
43 grammes, reinforcing what was expected of them as students
44 studying at a university and their responsibilities to other learn-
45 ers. However, the technology could become a barrier to learning
46 and disrupt the development of social presence. In all three
47 cases, technical challenges were experienced, most notable of
48 which was poor video and audio quality:

49 *The quality issues ... they're off-putting. You don't want to
50 be looking at blurry images or not be able to make out half the
51 words, to struggle to hear what your colleagues or lecturers or
52 the performers in the space are saying or doing, makes the
53 whole exercise somewhat redundant. (Tutor 2a; Case study 2).*

54 *The quality was very poor and her video appeared for one
55 second only. The sound quality was also very poor (Tutor 3;
56 Case study 3).*

57 Although Abbass et al. (2011) state that there is little re-
58 search evidence that using web-conference technology causes

59 learner anxiety, some of our learners did not relish the idea of
60 seeing themselves on a video. Furthermore, after discussions
61 with students, tutors became very aware that they could be
62 talking with students in their bedrooms since this was where
63 students' computers were often located. For some this could be
64 a barrier to using OSLEs:

65 *You are coming into someone's space and you're aware of,
66 you know, that you might have a bedroom or sitting room that's
67 piled high with things. You know, you wouldn't necessarily
68 invite someone into that... you'd have a good old tidy ...it's
69 pretty much going into someone's personal space. (Tutor 3;
70 Case study 3).*

Tutor Presence

71 Throughout the interviews and in the diaries, the four tutors
72 continuously reflected on how use of the OSLE impacted on the
73 way they worked with their learners and how they organised the
74 learning environment. They were considering if, and in what
75 ways, the OSLE affected "teaching presence" and more pre-
76 cisely how it changed their role from lecturer to facilitator. As
77 Cornelius and Gash state:

78 *Teachers taking on the challenge of virtual classrooms
79 should be prepared to be unsettled by the experience; they need
80 to be ready to question and reflect on their practice...* (Corne-
81 lius & Gash, 2012, p. 4).

82 We have summarised our tutors' reflections into three sec-
83 tions, mirroring the three indicators used by Garrison and
84 Anderson (2003) to describe tutor presence.

85 1) *The design and organisation of the learning environment*

86 Tutors particularly reflected on how the OSLE impacted on:
87 • *Preparation.* In Falloon's study (2011), tutors were not
88 sufficiently prepared for the online environment and so read
89 from notes and did not plan for interactive sessions. In
90 comparison, our tutors to support student learning prepared
91 and organized highly interactive sessions and tasks, often
92 mirroring the "practical inquiry" model suggested by Gar-
93 rison (2011). Students were expected to ask, answer, chal-
94 lenge, respond and debate as in their face-to-face sessions.
95 In case study 1, the tutor would send comments on drafts of
96 the dissertations and then plan how he would probe the stu-
97 dents' understanding. In case study 2, the tutors explained
98 what they wanted the sessions to achieve but the students
99 determined how they wanted to use the OSLE for this. Also,
100 because the students already knew each other and their tu-
101 tors, there was less time required for the 'participatory
102 moves' so common in asynchronous communication where
103 by posts are made to establish a learner's presence (Paulus
104 & Phipps, 2008). However, in the first few sessions, tutors
105 were unprepared for the technical issues that they needed to
106 handle and troubleshoot (as noted in previous case studies),
107 for example, explaining to students how to activate their
108 webcams.

109 • *Pacing.* Tutors became increasingly aware that working in
110 the online environment was very demanding: it was more
111 intense and required more concentration mirroring other
112 studies such as the Annie project (Childs, 2003). Therefore,
113 tutors would ensure that the length of sessions was carefully
114 organized with, if necessary, breaks and break-out sessions.

115 2) *The facilitation of discourse*

116 Reflecting their approaches to learning and teaching, in all
117 three case studies it could be seen that the tutors had planned

1 that the OSLE sessions should support various types of dialogue enabling the development of social and cognitive presences (Garrison, 2011). Often sessions would start with general conversations, for example about the weather, but this would rapidly progress to focussed discourse about their studies. In essence the discussions would move through and between the four types of dialogue outlined by Burbules (1993): casual conversation; inquiry; debate and instruction, even in case study 3.

9 All of the tutors had assumed that the OSLE technology 10 would be an easy medium to facilitate sustained discourse with 11 their students and one in which the learners would be happy to 12 use for discussion. They were, however, surprised and unprepared 13 when the students were initially uncomfortable at using 14 the technology for learning. The learners were looking to the 15 tutors to "... lead them into the OSLE and make them feel comfortable" (Tutor 1; Case study 1). Thus, in their interviews, the 17 tutors started to reflect upon their communication skills which 18 had been developed and honed in the more traditional face-to- 19 face learning environment and considered how they needed to 20 refine these for the online synchronous learning environment:

21 *it's different than a classroom and it can throw up some dif- 22 ferent useful pointers to your own communication and lecturing 23 skills (Tutor 1; Case study 1).*

24 3) Direct instruction

25 In the three very different case studies, the tutors wanted to 26 use the OSLE as a tool to correct misconceptions and misun- 27 derstandings. Most felt that the OSLE was much better at this 28 than other synchronous alternatives such as Skype, or the tele- 29 phone, or asynchronous options such as email. Nevertheless, 30 the tutors realised that the OSLE impacted on how they tutored 31 students; it was important that communications were more pre- 32 cise and less verbose:

33 *Probably the main aspect of learning that comes up here is 34 about communication skills and lecturing skills. The talking 35 skills, the listening skills... and that is because it is similar to 36 the classroom situation, but the pace is quite different and so 37 you find that you need to express yourself perhaps a bit more 38 clearly, or consider what you're saying a bit more because 39 feedback does come back and they can ask you questions (Tutor 40 1; Case study 1).*

41 Also, as mentioned earlier, tutors had to convey information 42 which they would normally support with non-verbal communica- 43 tion or physical correction, for example, tutors in case 2 had 44 to explain how an arm needed to be moved and to demonstrate 45 whereas in the face-to-face environment they would have been 46 able to physically move the learner's arm.

47 All the tutors considered that working through the OSLE had 48 impacted on the way they worked in face-to-face sessions. This 49 is known as the "reverse impact" phenomenon (Cornelius & 50 Gash, 2012) whereby improving approaches to learning and 51 teaching online leads to enhancements in face-to-face learning 52 environments.

Limitations

53 Our small collective study had limitations such as low levels 54 of student participation at each stage of the data collection as 55 well as technical issues in using the OSLE which impacted on 56 data collection in relation to the creation of video diaries. These 57 are described elsewhere (Peacock, Murray, Girdler, Brown, 58 Dean, & Mastrominico, 2011). Such small numbers meant that 59 we could not do justice to the notion of exploring a true com- 60 munity of inquiry as outlined by Garrison and Anderson (2011)

61 and thus, can only hint at the possibility of the role of an OSLE 62 in supporting a group of learners engaging in critical discourse 63 and reflection.

64 The CoI framework nevertheless provided us with an evalua- 65 tive tool that demonstrates the learning that had been supported 66 when using the OSLE. However, one notable exception was the 67 lack of consideration by the Framework to multi-modality 68 which perhaps reflects the development of the CoI from asyn- 69 chronous online discussions. However, the theory of multi- 70 modality would seem highly applicable to OSLEs (de Freitas & 71 Neumann, 2009). As reported by McBrien & Jones (2009), this 72 issue was raised by a tutor who stated:

73 *one [problem] was the confusion that resulted from too many 74 simultaneous interactions such as audio, typed chat, and white- 75 board/PowerPoint or group questions that could be answered 76 using emoticons, Yes/No, or multiple choice responses. (Mc- 77 Brien & Jones, 2009, p. 29).*

78 This is echoed in our study:

79 *There's a lot to look at and I felt like I was an air traffic 80 controller where I had to look out the window, or in this case 81 look at the students and looking could mean communicating 82 with the students as well as keep an eye on all the buttons and 83 gadgets... (Tutor 1; Case study 1).*

84 Future work on OSLEs will certainly need to explore this 85 area in more depth. It is also suggested that the 34-item Com- 86 munity of Inquiry framework survey instrument could be used 87 amongst others to interrogate data in future studies (Garrison, 88 2011).

Conclusion

89 Online synchronous learning environments are an emerging 90 and rapidly advancing technology which have potential to con- 91 nect our learners and tutors wherever they may be and whatever 92 their personal responsibilities and commitments. Our findings 93 concur with many other case studies that OSLEs can offer a 94 lively, personal and dynamic learning space. For our rehearsals- 95 based case study 2, the use of the OSLE echoed many of the 96 findings of the ANNIE project and video-conference projects 97 within dance but each of the challenges could be addressed and 98 positively so. However, use of the OSLE also had an unex- 99 pected benefit since it allowed students to record their rehearsals- 100 als and then watch these alone and/or with their tutors, sup- 101 porting both personal reflection and social discourse. Tutors 102 also felt that the OSLE gave the learners vital experience of 103 working in a different media which was essential for students in 104 drama reflecting the fluidity of the subject and importance of 105 technology:

106 *Certainly for drama students working with media, especially 107 new media for our particular specialism which is in Contem- 108 porary Performance, looking at experimental and often hybrid 109 performance forms which involve multi-media work, it's very 110 important indeed, so getting them to become hands-on and 111 empowered with technology which allows them to manipulate 112 media, manipulate the way they present themselves in media, 113 learn how that impacts on their performance work and how 114 they can mix and play with technology within their live work, is 115 very exciting indeed which is one of the things which led us to 116 want to be a part of this project in the first place. As a result, 117 the students this year have had a much more fluid relationship 118 with technology. (Tutor 2a; Case Study 2).*

119 By using the CoI framework, we could explore in greater

depth the potential of an OSLE to support learning in the performing arts. The basis of the framework—the interplay between individual meaning making and the social environment—was highly suitable for our subjects. We found that the OSLE provided a convenient and easy to use tool, which enabled our tutors to reach out to their learners and develop a strong social presence, supporting learning wherever the students and tutors were physically located. The framework also helped us to see some of the issues where the OSLE challenged learners and tutors, for example, not everyone liked the video option, while the variable quality of the audio and video meant that the OSLE sometimes restricted social presence. The turn-taking necessary to avoid audio “squeal” also limited spontaneous debate and discussion where a community could probe a learner’s emergent understanding. Exploring the tutor presence with regard to the CoI was particularly useful since it provided structure to interrogate our findings and supported the development of guidelines for using OSLEs which are available elsewhere (Murray & Peacock, 2011).

Research in this area is still in its infancy (Skylar, 2009). We suggest that further studies are needed to explore additional ways in which OSLEs can be used to support learning and teaching, especially in other subject areas, and potentially in conjunction, with a wider range of media, such as mobile technologies. It is also recommended that longitudinal studies are undertaken which can chart the development of a more complex understanding of OSLEs and their role in the learning and teaching process. Furthermore, one of the most challenging areas will be the use of OSLEs or equivalent for merging face-to-face and online students in the virtual and physical classrooms.

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REFERENCES

- Abbass, A., Arthey, S., Elliott, J., Fedak, T., Nowowieiski, D., Markovski, J., & Nowowieiski, S. (2011). Web-conference supervision for advanced psychotherapy training: A practical guide. *Psychotherapy*, 48, 109-118. doi:10.1037/a0022427
- Browne, T., Hewitt, R., Jenkins, M., Voce, J., Walker, R., & Yip, H. (2010). 2010 Survey of technology enhanced learning for higher education in the UK. URL (last checked 26 August 2012). http://www.ucisa.ac.uk/~/media/groups/ssg/surveys/TEL%20survey%202010_FINAL
- Bryman, A. (2001). *Social research methods*. Oxford: Oxford University Press.

- Burbules, N. (1993). *Dialogue in teaching: Theory and practice*. New York: Teachers College Press.
- Butler, J., & Sullivan, M. (2007). Pitfalls, perils, and profound pleasures of live elearning. *Distance Learning*, 4, 31-36.
- Carbonaro, M., King, S., Taylor, E., Satzinger, F., Snart, F., & Drummond, J. (2008). Integration of e-learning technologies in an inter-professional health science course. *Medical Teacher*, 30, 25-33. doi:10.1080/01421590701753450
- Chatterton, P. (2010). Designing for participant engagement with blackboard collaborate. URL (last checked 26 August 2012). <http://www.jisc.ac.uk/media/documents/programmes/elearning/Collaborateguidance/Blackboard%20Collaborate%20Good%20Practice%20Guide.pdf>
- Childs, M. (2003). E-tutoring in synchronous and asynchronous environments. *Interactions Journal*, 7. URL (last checked 26 August 2012). <http://www2.warwick.ac.uk/services/ldc/resource/interactions/archiv/e/issue20/childs>
- Cornelius, S., & Gash, D. (2012). How do you know if anyone is there? Questions from teachers new to virtual classrooms. *Educational Developments*, 13, 1-7.
- de Freitas, S., & Neumann, T. (2009). Pedagogical strategies supporting the use of synchronous audiographic conferencing: A review of the literature. *British Journal of Educational Technology*, 40, 980-998. doi:10.1111/j.1467-8535.2008.00887.x
- Dammers, R. (2009). Utilizing Internet-based video conferencing for instrumental music lessons. *Applications of Research in Music*, 28, 17-24. doi:10.1177/8755123309344159
- DiMaria-Ghalili, R. A., Ostrow, L., & Rodney, K. (2005). Webcasting: A new instructional technology in distance graduate nursing education. *Journal of Nursing Education*, 44, 11-18.
- Falloon, G. (2011). Making the connection: Moore’s theory of transactional distance and its relevance to the use of a virtual classroom in postgraduate online teacher education. *Journal of Research on Technology in Education*, 43, 187-209.
- Garrison, D. R. (2011). *E-learning in the 21st century. A framework for research and practice*. (2nd ed.). London: Routledge.
- Garrison, D. R., & Anderson, T. (2003). *E-Learning in the 21st century: A framework for research and practice*. London: Routledge/Falmer. doi:10.4324/9780203166093
- Garrison, R., & Arbaugh, J. (2007) Researching the community of inquiry framework: Review, issues, and future directions. *The Internet and Higher Education*, 10, 157-172. doi:10.1016/j.iheduc.2007.04.001
- Glazier, J. D. (1992). Qualitative research methodologies for library and information science: an introduction. In J. D. Glazier, & R. R. Powell (Eds.) *Qualitative research in information management* (pp. 1-13). Englewood, CO: Libraries Unlimited.
- Gomm, R., Hammersley, M., & Foster, P. (2000). Case study and generalization. In R. Gomm, M. Hammersley, & P. Foster (Eds.), *Case study method* (pp. 98-115). London: Sage.
- Janson, M. (2004). Distance makes the dancer grow stronger. *Dance Teacher*, 26, 46-48.
- JISCInfoNet. (2012). Effective use of virtual learning environments. URL (last checked 1 September 2012). <http://www.jiscinfonet.ac.uk/InfoKits/effective-use-of-VLEs>
- Laubach, M., & Little, L. (2009). Trials and triumphs: piloting a web conference system to deliver blended learning across multiple sites. *Journal of the Research Centre for Educational Technology*, 5, 56-67.
- McBrien, J., & Jones P. (2009). Virtual spaces: Employing a synchronous online classroom to facilitate student engagement in online learning. *International Review of Research in Open and Distance Learning*, 10, 1-17.
- Murray, S., & Peacock, S. (2011). Recommendations and guidelines for tutors using online synchronous learning environments (OSLE). URL (last checked 29 August 2012).

- <http://www.qmu.ac.uk/palatine/documents/KeyRecommendations.pdf>
- Murray, S., & Peacock, S. (2012). The video diary as a method of data collection in qualitative educational research. *International Journal of Qualitative Methods*. In progress.
- Olaniran, B. (2006). Applying synchronous computer-mediated communication into course design: some considerations and practical guides. *Campus-Wide Information Systems*, 23, 210-220.
<doi:10.1108/10650740610674210>
- Ostrow, L., & DiMaria-Ghalili, R. A. (2005). Distance education for graduate nursing: one state school's experience. *Journal of Nursing Education*, 44, 5-10.
- Parrish, M. (2008). Dancing the distance: iDance Arizona videoconferencing reaches rural communities. *Research in Dance Education*, 9, 187-208. <doi:10.1080/14647890802087811>
- Paulus, T., & Phipps, G. (2008). Approaches to case analyses in synchronous and asynchronous environments. *Journal of Computer-Mediated Communication*, 13, 459-484.
<doi:10.1111/j.1083-6101.2008.00405.x>
- Peacock, S., Murray, S., Girdler, S., Brown, D., Dean, J., & Mastrominico, B. (2011). An exploration of learner and tutor experience in using online synchronous learning environments (OSLEs) across disciplines within the School of Drama and Creative Industries. URL (last checked 26 August 2012).
<http://www.qmu.ac.uk/palatine/documents/OSLE.pdf>
- Porto, S. (2006). Synchronous online conferencing. DE Oracle @ UMC. URL (last checked 26 August 2012). <http://deoracle.org/online-pedagogy/synchronous-communication/synchronous-conferencing.html>
- Quality Assurance Agency for Higher Education (2007). Drama, dance and performance. URL (last checked 26 August 2012). <http://www.qmu.ac.uk/futurefocus/EmployabilityProfiles/Dance%20Drama%20and%20Performance%20Employability%20Profile.pdf>
- Rogoza, C. (2007). Wimba live classroom. A case study of diffusion of innovation. *Distance learning*, 4, 48-56.
- Rushle, S., & Loch, B. (2008). Conducting a trial of web conferencing software: Why, how, and perceptions from the coalface. *Turkish Online Journal of Distance Education*, 9, 19-28.
- Stake, R. (2000). Case studies. In N. K. Denzin, & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 435-454). Thousand Oaks, CA: Sage.
- Skylar, A. (2009) A comparison of asynchronous online text-based lectures and synchronous interactive web conferencing lectures. *Issues in Teacher Education*, 18, 69-84.
- Valaitis, R., Akhtar-Danesh, N., Eva, K., Levinson, A., & Wainman, B. (2007). Pragmatists, positive communicators, and shy enthusiasts: Three viewpoints on web conferencing in health sciences education. *Journal of Medical Internet Research*, 9. URL (last checked 26 August 2012). <http://www.jmir.org/2007/5/e39>