

**Is anybody there? Engaging learners in synchronous online
classes** Insights gleaned from faculty experiencing the transition from face-face to
online instruction

Sara Kyofuna
sara.kyofuna@ncirl.ie
Centre for Research and Innovation in Learning and Teaching
National College of Ireland
Dublin, Ireland

Abstract

This paper investigates the challenges, opportunities and practices of synchronous online teaching in higher education. It reports on preliminary research insights arising from an on-going blended learning program that mainly involves synchronous online instruction. The approach taken involves interviews with lecturers at different stages of the online courses, and observations of the live online classes. To-date, a number of synchronous forms of communication media have been developed specifically for educational purposes and are increasingly integrated in higher education practice. Particularly, virtual classroom environments like Wimba classroom, BigBlue Button, WIZIQ, Adobe Connect, WebEx, and Blackboard collaborate, among others. These allow real-time interaction among geographically dispersed learners thus add aspects of immediacy and engagement. But, we ask, what is it like, for practitioners and educators, to integrate synchronous media forms in teaching practice. The findings highlight challenges of learner engagement and interactivity, dealing with silence and isolation, learning and adopting new instructional strategies and having to re-evaluate the perceived role as lecturers and the instructional practices. Some of the lecturers also questioned the effectiveness of online synchronous instruction in learning and teaching. Findings also indicate that often, the practice is to transfer traditional habits of face-to-face instructions to the online classes. Nonetheless, opportunities for new forms of student engagement that can be used in the traditional face-to-face instruction were also highlighted.

Keywords

Online Learning and Teaching, Learner engagement

1. Introduction

Online learning and teaching is attracting much attention in higher education today. This is evident from Blogs, newspapers, discussion forums that are constantly writing about the ‘near-revolutionary’ developments in online learning. Developments like, the current big trend is MOOC (Massive, Open Online Courses), the Open CourseWare and the numerous online courses provided through Open Universities (OU). Indeed, online learning is considered to be one of the most rapidly growing areas in both education and industry (Gilbert et al, 2007).

However, as faculty try to keep up with the ever changing trends in higher education and adapt to take full advantage of the opportunities provided, they are faced with challenges that at least require them to re-evaluate and re-think their long standing teaching practices. This is no easy task, for it demands substantial time and effort in learning new relevant required competencies and practices.

This paper deals with the transition to teaching in online synchronous classes and the pursuit to meaningfully engage learners. It investigates the practices, challenges and opportunities of teaching and learning in synchronous online classes in a higher education institution.

2. Online learning

The terminology used in the scholarship of online learning remains contested and unclear (Oliver & Trigwell, 2005). The lack of clarity is partly because the term is often used interchangeably with eLearning and distance learning (Moore & Kearsley, 2011). Nonetheless, in this study, the term online learning is used to refer to individuals’ engagement in instruction through the medium of the internet. Online learning is commonly categorized as asynchronous and synchronous. The difference between the two is the varying degree of synchronicity in communication media (Hrastinski, 2006). Asynchronous online modes like email, bulletin boards, discussion boards, etc. emphasize communication and interaction among individuals at different times as desired – ‘anytime, anywhere’ (Moore et al, 2011). That is, learners and lecturers or tutors access, read, interact and engage with previously prepared instruction, course proceedings and resources at different times as preferred. Asynchronous online modes therefore provide learners the experience of more control and flexibility in engaging with the course (Kearsley, 1995). But, it is argued that asynchronous modes are also restrictive and insufficient in creating a sense of online ‘presence’ and community among learners. Hence inadequate in addressing the common problem of isolation in online learning (Hrastinski, 2007; Kruger, 2006; Moore & Marra, 2005).

Synchronous online learning modes on the other hand, emphasize communication and interaction in ‘real time’ or live sessions (Moore et al., 2011). It thus affords learners the flexibility of accessing and engaging with courses and learning material from anywhere, but is restrictive in terms of control of schedules. That is, because sessions are in real-time, learners have to ‘fit’ other commitments around pre-set schedules to be able to attend classes. However, synchronous online modes have been argued to enhance the experience of ‘presence’, belonging and community aspects among online learners (Gunawardena & Zittle,

1997; Lowenthal, 2010; Picciano, 2002). Clearly, each of the modes of online learning mentioned has benefits and limitations. Therefore, some have argued for a blend that involves a combination of online learning modes (synchronous and asynchronous) and traditional face-to-face settings (Bonk & Graham, 2012; Hrastinski, 2008). This is the approach adopted by National College of Ireland (NCI) and it provides a contextual setting for this study.

Online learning has a long standing prevalence of using asynchronous modes (Romiszowski and Mason, 2004; Chou, 2002; Twigg, 2001). Indeed, synchronous modes of communication are still largely viewed as peripheral forms of online learning – and are often used as occasionally scheduled webinars or tutorials (Collis, 2002). However, today, a number of synchronous forms of communication media have been developed specifically for educational purposes. Particularly, virtual classroom environments like BigBlue Button, WizIQ, Adobe Connect, Blackboard collaborate, etc., These allow real-time interaction among geographically dispersed learners thus adding aspects of immediacy and engagement (Romiszowski and Mason, 2004). Indeed Kinshuk, & Chen (2006) noted that developments in technology and increasing access to broader bandwidth internet have led to an increased popularity of synchronous online learning solutions. However, they further assert, that this “has led to a change in paradigm of how e-learning is being envisaged in its traditional sense. On one hand, it lures academics to fall back to their traditional habits of face-to-face instructions and on the other hand, it promises to provide the best of both worlds”. This conundrum is the motivation behind the research presented in this paper. This study broadly deals with lecturers’ transition to teaching in online synchronous classes and the pursuit to meaningfully engage learners. The specific research question is as follows; what what is it like, for practitioners and educators, to integrate synchronous online learning modes in teaching practice?

3. Context of study

The blended learning program at National college of Ireland (NCI) provides a contextual setting for this study. It is an on-going program that involves the development of a blended learning version of existing programmes. The rationale for incorporating blended learning into the teaching, learning and assessment practices of NCI includes; Flexible and adaptive learning to suit students’ needs, promoting self-directed and autonomous learners, catering for individual learners through engagement and multiple modes of learning, and supporting effective teaching strategies. To-date, a number of courses are delivered through blended learning, including: Certificate in First Line Management (CLFM), BA in Management Practice (BAMP) and Diploma in Pensions Management (IIPM). The courses are mainly designed for supervisors, managers or aspiring managers in small and medium enterprises, and other industry sectors. The blended learning program is led by the Centre for Research and Innovation in Learning and Teaching (CRILT) and from the onset the development of blended learning was framed in terms of pedagogic innovation and authentic research (Casey & Kyofuna, 2011).

Courses provided through blended learning are typically organized into three instructional settings, namely: On-line synchronous class - with fixed time schedules, normally, once or

twice a week in the evenings. Both students and lecturers login to the online or virtual classroom environment, at the scheduled time to attend sessions. The second setting is the face-to-face classes - with fixed time schedule, normally once a month. The third is the asynchronous online modes in the form of flexible activities like continuous assessments, assignments, archive recordings of the live session etc., accessible through the college Moodle. Durations of the courses provided through blended learning range from one to three years. The typical class size on the blended courses is between 10 – 25 students. The findings reported here are based on the lecturers’ experiences, practices and perceptions of the courses mentioned above.

The lecturers involved are experienced teachers and experts in their subject areas, but, they were novices in terms of online synchronous instruction. Consequently, the lecturers underwent training on teaching and learning online, and blended learning approach. The training involved a series of workshops, up-front preparation of materials, strategies for teaching in the online synchronous classes and practice sessions with peer-review processes. The author of this research paper was and still is actively involved in the training of tutors and the development of the blended learning program at NCI.

4. Method

This research paper deals with the transition to teaching in online synchronous classes and the pursuit to meaningfully engage learners. A descriptive case study approach (Merriam, 1998) was used as a structure for the inquiry into lecturers’ perspectives on synchronous online teaching and learning. This approach has been found to be useful in answering questions of ‘what’, ‘how’ and ‘why’ (Creswell, 2012; Yin, 2009) and effective for describing and explaining events or phenomenon rather than predicting (Merriam, 1998). Indeed, (Merriam, 1998: p.2) asserts that the case study approach is an “ideal design for understanding and interpreting observations of educational phenomenon”.

This study involved interviews with six lecturers teaching different subjects via online synchronous mode. The interviews were conducted at different stages through the course duration. For example, there were weekly or bi-weekly discussions on how the online classes are progressing, as well as a detailed interview towards the end of the course with each lecturer. The research also involved observations of the live synchronous classes. The findings reported are derived from those interviews and observations. Table below gives details of the respondents.

Research name	Gender
Martin	Male
James	Male
Anthony	Male
Barbara	Female
Denis	Male

The respondents have combined expertise in areas of accounting, entrepreneurship, pensions management, business management and law. Each of them has been teaching at NCI for at least four years.

5. Findings

This section presents the research findings based on a thematic analysis of interviews conducted with six lecturers. The findings are organized and categorized as follows; (a) initial expectations and early stage experiences. Here, pre-conceived notions and assumptions about synchronous online learning are explored. (b) General approach to teaching, - here, we examine existing practices and perceptions on teaching and the underlying philosophical stance. (c) The challenges encountered in teaching in the online synchronous classes. Examined here, are the respondents' pursuits in transitioning to online teaching and learning.

a) Initial expectations and early stage experiences

Firstly, lecturers were asked about their initial expectations, prior to commencing and at the early stages of teaching online. The purpose was to find out the pre-conceived notions and assumptions about online learning and teaching. Most of the lecturers admitted not having explicit prior perceptions about online learning and teaching. Take this instance of James who commented, *"I didn't really have any prior perceptions on teaching online. I did have concerns as to what it would be like from a room point of view, camera point of view, like the set up"*. However, the respondents talk about being afraid and worried about how online teaching would actually work and whether they would manage. This initial anxiety was mainly associated with technologies, that is, how to cope with, use and manage the technologies involved. Particularly, the virtual classroom environment that was new to all the respondents. The initial anxiety was also because of the fear of failure. As Denis noted, *"people may be afraid of it because it's new and unknown but also the fear of failure as a lecturer"*. The following comments from James, Barbara and Denis elaborate further on the extent of the initial anxiety and how it was managed:

I was almost too afraid to think about it. I really didn't know how I was going to cope with the computers. The fears were mainly about using the technology. I am used to the bit of one-way where I'm recorded giving a class but with this interactive, I was sure the technology was going to get to me. (Barbara)

As mentioned earlier, lecturers were provided with training in preparation for teaching online. They were also continuously provided with support structures during the live sessions. The support system includes a learning technologist (or eLearning producer), an IT support person is available at hand to help with difficulties, as well as peer mentoring. It was noted that the training and support structures helped in easing the initial anxiety. James explained, *"Initially I had an immediate panic that I was not going to be able to do it. I was worried I would not be able to use the technology. So getting to work with the technology beforehand was the saving grace for me"*.

Additionally, for all the respondents, the early stages of teaching online were also marked by the realization that it's not as daunting as anticipated. This was pleasant surprise for some like Barbara, she commented, *"I was really surprised how I was calm on the day and how I have managed"*. At this stage in the process of transitioning to online instruction, a shift from the initial 'technological' issues is observed. The focus shifts to instructional and pedagogic issues in the synchronous online classrooms. Indeed many were surprised at what could be

done, achieved and the potential available. As Denis elaborates, *“at the start I was terrified by the prospect of facing both the technological aspect and the interrelation aspect of it. I thought it was going to be extremely difficult and that it would be impersonal which also it turned out not to be”*.

b) General approaches to teaching

Respondents were asked about their perception and general approach to teaching (teaching philosophies). The aim was to establish how existing approaches and perceptions influenced practices when teaching online. The underlying philosophy on teaching was mainly that of information and knowledge transfer. Most respondents talked about viewing their lecturing roles, as providers of information and content to learners. The assertion from Anthony illustrates, *“I see myself as a source of information, I need to organize that information and I need to put it in a way that people will comprehend and will hopefully remember as well”*. Similarly, James explained that in teaching, he focuses on providing course content through PowerPoint; *“my focus is to put the key points in the slide and go into details when delivering. As a fall out from that, when I’m setting an exam, over 90% of what I set is in the slides. So the approach would be, important details on the slides, important element in my teaching, the course content”*.

In contrast however, a couple of the respondents expressed a different view and approach to teaching. This view was underpinned by perspectives of participatory and collaborative learning. For them, the emphasis of teaching is about facilitation and active participation. Put differently, they viewed themselves as facilitators in the process of learning and considered their expertise on the subject as having been built from years of participating in industry practices. Notably, Martin asserted;

I am rather reluctant to say I’m teaching anyone at any time. Also traditionally we say that the teacher is the SME (subject matter expert) and I would be slow to say that about myself. What I would say is that I have some expertise in the area built up over years of industry practice. Thus teaching for me is facilitating that process of getting ideas out and challenging those ideas. So, I would call myself a facilitator, or tutor.

In transitioning to teaching in synchronous online classes, it was observed that lecturers fell back to their traditional face-to-face teaching practices. In other words, the strategy was to transfer practices of teaching in face-to-face to teaching in the online classes. This transpired both in preparations for the online classes, as James commented about his preparation for the online classes, *“It’s exactly the same slides, no editing at all and I use the same notes for both lectures [face-to-face and online class]. So my script is the same but the output is significantly different”*. As well as during teaching in the online classes, Anthony noted the following about teaching online, *“In the online classes I try to do much the same. I try to replicate the face-to-face as much as possible to the extent that I get physically animated”*. Moreover, for most of the respondents, the main concern expressed was about how their ‘lecturing style’ would be accommodated or ‘fit’ in the new online learning environment. Barbara commented, *“It’s my first time teaching online and I wasn’t sure how my lecturing style would actually fit in with the blended learning”*. This was in contrast to the researcher’s expectations that the

concerns would be rather about what changes or adaptations had to be made in light of the new learning environment.

This tendency of falling back to old practices is perhaps understandable given that the approaches have been used for many years. Indeed, even those who recognized and acknowledged the need to adapt, found that it was not so easy after all. As Barbara explained; *“the big challenge for me is that because I have been doing the same thing for 10 -11 years. I’m used to my style and it becomes a comfort zone. But I’m working on it”*. Correspondingly Kinshuk, & Chen (2006) also warned that synchronous online modes could “lure academics to fall back to their traditional habits of face-to-face instruction”. However, with this tendency, some of the lecturers soon found themselves in difficulties. For example, with the practice of mainly using PowerPoint presentations, the lecturers’ monologue becomes even more explicit and exaggerated, and the lack of feedback in the online setting was intensified and unsettling for some. James specifically talked about the feedback issue;

It’s when I started teaching online that I started to realize just how much feedback you get in a face-to-face class that may look disinterested. The difference I believe is that in the face-to-face class, as you look around you can see faces of comprehension and confusion and react to it accordingly. In the online class, for each slide, I’m flying through them.

Additionally, Anthony commented about the continuous monologue;

online I invariably start by covering material and I’m usually about 3 slides in before it dawns on me that I’m giving only one view and I’m simply going from here to here to here. In the face-to-face class, that happens much earlier, I suppose it’s the physical presence of other people. They are all there looking at me and expecting me to perform.

Consequently, some doubted and questioned the effectiveness of online synchronous classes. The argument put forward was partly the focus on a set curriculum and learning outcomes. Anthony explained, *“I’m not really sure, in a compressed curriculum, spending time discussing things is giving us the pace to cover all that we need to be doing. But still we do it to get learners in some kind of dialogue”*. The argument is also in terms of the lack of body language communication like facial cue. Anthony further added; *“I don’t think it’s a good way to teach as contrasted from attendance of a lecture [face-to-face]. I think it misses on a better dialogue; the ability to read people’s faces and to see whether I’m getting the point across”*. Even more, according to Martin, the possibility of getting misunderstood is greater:

“I think that in the online, they are missing the body language and so much may not translate. It’s similar to teaching in a foreign or multicultural context where some humour might not translate. So I’m acutely aware of the difference between content and context because when online the point may be missed say if they don’t see my eye balling”.

However, it is worth noting Salomon et al., (1991: p.8) contention here, that, “no important impact can be expected when the same old activity is carried out with a technology that makes it a bit faster or easier; the activity itself has to change”. Indeed, on the other hand, some of the lecturers recognized that they had to make changes or adapt their teaching practices in light of the new learning environment, and were prepared to do so from the start. For example, Martin asserted that, *“more fundamentally I think you could be a very good*

facilitator in the class environment [face-to-face] but you have to change in the online environment because it's different. So if you have your standard methodology like the 23 PowerPoint slides you use, if you replicate that online I think you will have a problem cause its completely different”.

The aspects highlighted on the need to re-think and adapt old practices when it comes to teaching and learning in online synchronous classes, can be considered basics. Salomon et al., (1991) take a step further, they identify two tenets of effective use of technologies like computer tools and/or software applications, to support teaching and learning. In one way, technologies can be used to emphasize already automated practices. An example here is the expressed concern from respondents, of how their ‘lecturing style’ would be accommodated or ‘fit’ in the new online learning environment. Salomon et al., (1991) refer to this as ‘blind reliance’ on structural features of technologies without paying attention to unique situation and novel features. In another way, technologies can be used to seriously consider new ways of practice and interrelating different concepts, while paying attention to the unique situation. For example, consider how teaching and learning practices are adapted or transformed in online synchronous media. This is obviously more effort demanding, however, it opens up great possibilities of generating new, interesting inferences and insights.

c) The challenges encountered in teaching in online synchronous classes

Respondents were asked about the challenges they have found in teaching in the online synchronous classes. The purpose was to get insights on their pursuits in transitioning to online learning and teaching. The challenges mentioned included; learner participation and engagement, technological difficulties, the effort and workload involved; connecting with students i.e. building rapport, and dealing with silence. In the following the respondents’ views on these issues are presented in detail.

Learner participation and engagement: was noted as a major difficulty for the lecturers. Active participation from learners during the online classes was considered important for a number of reasons; firstly, respondents noted that active participation gives an indication to whether the students understand and follow, or are confused. Indeed Barbara explained *“participation, I think you have to have it online. If I don’t have a level of participation and interactions I doubt where they ‘got it’. So when we interact and I get active participation I can tell that they get it, from the answers they are able to give back”.* The second reason highlighted is that active learner participation helps in forming a connection with students and thus limits the danger of it becoming an impersonal experience. Denis noted that, *“you get to know the voices and form some kind of connection. There are different personalities, from the voices, you get a good impression of the person, like you get to know who is quiet, forcefully, playful, passive etc.”* Thirdly and finally, active participation was said to help deal with the feeling of being alone in room talking to a computer (isolation). According to James *“there is always that fear that I have been talking away to myself, so there is an element of is there anyone else out there”.*

However, most of the respondents struggled with getting learners to actively participate during the live online classes. This was evident from the observations of the on-going classes, as well as in the interviews. The following comment from James elaborates;

What I'm struggling with in my online class is getting feedback. What I'm looking for is getting them more involved, also simple feedback like are the learners happy or not, and I'm finding it hard to get that. The lack of feedback would be the biggest challenge.

Dealing with silence was another major challenge encountered in teaching in the online synchronous classes. As a spin off from the lack of or minimal interactivity and feedback from learners during classes, the issue of uncomfortable silence arose. Lecturers found themselves faced with periods of prolonged silence which they found difficult. In the synchronous online classes, the notion of silence carried significance in terms of isolation. As, Anthony explained, '*Online, a silence is a silence from the other end. It's the loneliness, two hours on your own in a room feels like you are isolated*'.

The typical reaction from the lecturers was to keep talking so as to fill the silence. This of course did not help in dealing with the problem but served to maintain a monotone during the sessions. James explained;

So what I'm finding is that because of the silence and the lack of feedback, I'm inclined to just keep going to cover the content. So there is little feedback coming back, and I'm talking faster, delivering faster and not going back over myself. I ran out of content to cover 20-30minutes earlier than the scheduled class duration.

However, as the course progressed, respondents found alternative ways of dealing with the silence. For example, Anthony explained, "*as regards the interactivity, in the online classes, that got better, I got better at it. At first I was concern with giving as much information to the learners. But I got better at including people, I think I have learnt a bit more from the experience and I am not afraid of the silence as I might have been initially*". This stance can be regarded as surface changes to the old practices, as opposed to substantial adaptations or transformation in instructional strategies and teaching practices. But, it can also be considered a step in a direction towards focus on learner engagement.

Technologies: the challenges reported in regards to technologies are twofold, first the technical problems that cause disruptions. On this note, Anthony commented, "*there are technological issues like, some have poor signals, some cannot connect, others have problems with the audio, etc. so, pulling back in people who missed a section cause of connectivity adds to the challenge*". The other aspect of the technological challenge is in terms of learning to effectively use the online class platform.

Finally, respondents also expressed a number of concerns in relation to the online synchronous classes that needed to be addressed in moving forward. The concerns include: the issue of learner engagement and motivation in the online synchronous classes. Perception of credibility; where online classes are not taken as serious academic endeavours. Lastly, that the students mainly rely on the archived recordings of the live sessions and thus get complacent to attend the online classes.

6. Conclusion

This paper set out to deal with the transition to teaching in online synchronous classes and the pursuit to meaningfully engage learners. It asked, what is it like, for practitioners and educators, to integrate synchronous online learning modes in teaching practice. The findings were categorized into four themes; initial expectations and early stage experiences, general approaches to teaching and the challenges encountered in teaching in the online synchronous classes

In the initial expectations and early stage experiences section, it was shown that most respondents did not have explicit expectations about online teaching and learning. But, respondents experienced anxiety during the early stages. This was mainly associated with using and managing technologies involved, and the fear of failure. However, the early stages were also marked by the realization that teaching in the online synchronous classes is not as daunting as initially anticipated, and this point marked a shift in focus from 'technical' issues to instructional or pedagogic issues.

Approaches to teaching in general were mainly rooted in notions of information and knowledge transfer, where most lecturers saw themselves as providers of information and content to learners. This was mainly done through PowerPoint presentations. However, a few of the respondents expressed a different perspective that is rooted in notions of participatory and collaborative learning. These saw themselves as facilitators in the process of learning.

In transitioning to teaching online, it was revealed that the practice is to transfer practices of teaching in face-to-face setting to teaching in the synchronous online classes. This transpired both in preparations and during the online classes.

Finding also revealed a number of challenges associated with teaching in the online synchronous setting. These include; learner participation and engagement, technological difficulties, dealing with silence, connecting with students i.e. building rapport, and the effort involved. Finally, the overall perceptions on synchronous online teaching and learning were that it is a worthwhile endeavour because of the perceived benefits and those synchronous modes are going to be significant part of education in the future. Thus, it is imperative and inevitable to re-think and re-evaluate the long standing educational practices.

It is important to note that the work in this study is still on-going. More is still needed to understand; effective pedagogies for synchronous online teaching and learning, effective ways to support both educators and learners as they try to keep up with the changing trends in higher education, learners' perceptions and experiences of learning in synchronous online setting, and approaches to meaningfully engage learners in these relatively new modes of teaching and learning.

References

- Bonk, C. J., & Graham, C. R. (2012). *The Handbook of Blended Learning: Global Perspectives, Local Designs*. John Wiley & Sons.
- Casey, L., & Kyofuna, S. (2011). Finding Pedagogy for Blended Learning. In *International Conference for Engaging Pedagogy*. Retrieved from http://icep.ie/wp-content/uploads/2012/01/Casey_Kyofuna.pdf
- Chou, C. C. (2002). A comparative content analysis of student interaction in synchronous and asynchronous learning networks. In *System Sciences, 2002. HICSS. Proceedings of the 35th Annual Hawaii International Conference on* (pp. 1795–1803).
- Creswell, J. W. (2012). *Qualitative inquiry and research design: Choosing among five approaches*. Sage.
- Gunawardena, C. N., & Zittle, F. J. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. *American Journal of Distance Education, 11*(3), 8–26.
- Hrastinski, S. (2006). Introducing an informal synchronous medium in a distance learning course: how is participation affected? *The Internet and Higher Education, 9*(2), 117–131.
- Hrastinski, S. (2008). The potential of synchronous communication to enhance participation in online discussions: A case study of two e-learning courses. *Information & Management, 45*(7), 499–506.
- Hrastinski, Stefan. (2007). *Participating in synchronous online education*. Department of Informatics, Lund University.
- Kearsley, G. (1995). *The nature and value of interaction in distance learning*. ACSDE Research Monograph.
- Kinshuk,, & Chen. (2006). Synchronous methods and applications in e-learning. *Campus-Wide Information Systems, 23*(3).
- Kruger, S. (2006). Students' experiences of e-learning: A virtual ethnography into blended online learning. In *the International Conference on Networked Learning*. Retrieved from <http://nlc.ell.aau.dk/past/nlc2006/abstracts/pdfs/P22%20Kruger.pdf>
- Lowenthal, P. R. (2010). The evolution and influence of social presence theory on online learning. *Online education and adult learning: New frontiers for teaching practices*. Hershey, PA: IGI Global.
- Merriam, S. B. (1998). *Qualitative Research and Case Study Applications in Education. Revised and Expanded from "Case Study Research in Education."*
- Moore, J. L., & Marra, R. M. (2005). A Comparative Analysis of Online Discussion Participation Protocols. *Journal of Research on Technology in Education, 38*(2), 191–212.
- Moore, Joi L., Dickson-Deane, C., & Galyen, K. (2011). e-Learning, online learning, and distance learning environments: Are they the same? *The Internet and Higher Education, 14*(2), 129–135.

- Moore, M. G., & Kearsley, G. (2011). *Distance education: A systems view of online learning*. Wadsworth Publishing Company.
- Oliver, M., & Trigwell, K. (2005). Can 'Blended Learning' Be Redeemed? *E-learning and Digital Media*, 2(1), 17–26.
- Picciano, A. G. (2002). Beyond student perceptions: Issues of interaction, presence, and performance in an online course. *Journal of Asynchronous learning networks*, 6(1), 21–40.
- Salomon, G., Perkins, D. N., & Globerson, T. (1991). Partners in Cognition: Extending Human Intelligence with Intelligent Technologies. *Educational Researcher*, 20(3), 2–9.
- Twigg, C. A. (2001). Innovations in Online Learning: Moving beyond No Significant Difference. The Pew Symposia in Learning and Technology (4th, Phoenix, Arizona, December 8-9, 2000).
- Yin, R. K. (2009). *Case study research: Design and methods* (Vol. 5). Sage.