

The Online Journal of Distance Education and e-Learning

Volume 2 Issue 4
October 2014

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Published in TURKEY

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The aim of TOJDEL is to help students, teachers, school administrators and communities better understand how to organize distance education for learning and teaching activities. The submitted articles should be original, unpublished, and not in consideration for publication elsewhere at the time of submission to TOJDEL. TOJDEL provides perspectives on topics relevant to the study, implementation and management of learning with technology.

I am always honored to be the editor in chief of TOJDEL. Many persons gave their valuable contributions for this issue.

TOJDEL, Governor State University and Sakarya University will organize the IDEC-2014 International Distance Education Conference (IDEC 2014) (www.id-ec.net) in December 2014 in Doha – Qatar.

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Table Of Contents

INVESTIGATING THE USE OF SOCIAL NETWORKING TOOLS IN IMPROVING STUDENTS' GRAMMAR: A CASE STUDY	1
<i>Amelia Abdullah Talha Taufik</i>	
ATTITUDE OF B.ED. STUDENTS' TOWARDS ODL INSTITUTIONS IN TAMIL NADU OPEN UNIVERSITY	11
<i>Dr.A.S.Arul Lawrence, Dr.C.Barathi</i>	
E-BOOK AS LEARNING TOOL: A REVIEW AND FOCUS FOR FUTURE RESEARCH	19
<i>Azidah Abu Ziden, Nur Kaliza Khalid</i>	
BLENDED LEARNING IN A BLENDED COMPOSITION CLASS: A CASE STUDY IN FRENCH	34
<i>Carolyn GASCOIGNE, Juliette PARNELL</i>	
SIMULTANEOUS DELIVERY OF LECTURES TO STUDENTS IN A LECTURE ROOM AND AN ONLINE MEETING ROOM USING THE ADOBE CONNECT TEACHING FACILITY	52
<i>Chet Geisel</i>	
EXAM PERFORMANCE IN A HYBRID COURSE: A MODEL FOR ASSESSING ONLINE AND IN CLASS EXAM DELIVERY MODES	70
<i>Danyelle Moore</i>	
THE USE OF PODCASTING REVISION LECTURES IN IMPROVING LEARNERS' ACADEMIC PERFORMANCE	81
<i>Elias Rankapola</i>	
BEST PRACTICES: AN ONLINE DOCTORAL LEARNING EXPERIENCE	92
<i>Tracy Christianson & Tracy Hoot</i>	
TECHNOLOGY INTEGRATION AT A CROSSROADS: DEAD END STREET OR NEW HORIZONS?	103
<i>Rogério Roth</i>	
FACTORS IN DESIGN OF ASSESSMENT FOR ONLINE COURSES: INSTRUCTORS' REFLECTIONS	132
<i>Shijuan Liu</i>	
LEARNING STYLES PREFERENCES AMONG USM DISTANCE LEARNERS VIA VIDEOCONFERENCING TECHNOLOGY.	154
<i>Siti Hajar</i>	
VIRTUAL SCHOOL LEADERSHIP: PROFESSIONAL DEVELOPMENT USING DIGITAL TECHNOLOGIES IN CANADA AND HAITI	168
<i>Steve Sider</i>	

Investigating The Use Of Social Networking Tools In Improving Students' Grammar: A Case Study

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ABSTRACT

The qualitative study is conducted to identify how using emails as a social networking tool can foster and improve students' grammar. This study employs a case study method as it could investigate new phenomenon within its real context. The samples of this study consist of five secondary school students from Penang. The instruments used in the data gathering process are threads analysis and semi-structured interview. Data is triangulated to justify the learning of grammar among the students. The findings showed notable improvement in the acquisition of grammar among the study respondents. The data also indicate that there is improvement in the motivation level and students are actually having fun using emails in their English classes.

Keywords: Social networking tools, emails, grammar, present progressive tense

INTRODUCTION

Of late, the declining standard of English language, especially on the acquisition of grammar, has put a dent in the measures taken by the Ministry of Education to uphold the standard of English (Sharier & Anton, 2010). Students are no longer able to use grammar effectively and proficiently. This is due to the fact that English is taught for communication purposes and the focus on grammar is not being highlighted as much as when the syllabus was still grammar-based. The Minister of Education expressed his dismay over the fact that students are not able to differentiate between words such as 'pain' and 'painful' (The New Strait Times, 2009). In order to upgrade the standard of the English language in Malaysia, the Ministry of Education has come up with the program of 'Upholding Bahasa Melayu, Strengthening the English Language'. In terms of learning grammar, it is found that students are not able to differentiate between simple present tense and present progressive tense. Such difficulties may contribute to misinterpretations. Teachers often find that many students are still unable to use the correct tenses while writing and speaking in the English language (Kosur, 2010). Students are not motivated to learn when teachers resort to traditional methods of teaching (Mohd. Hilmi and Dourado, 2010). Therefore, to improve the proficiency of English, new pedagogy and teaching methods need to be introduced in the classroom.

Information Communication and Technology (ICT) particularly the Social Networking Tools (SNT) has provided many benefits to the education fields. The teaching and learning process becomes more engaging and interactive with the utilisation of the ICT in the classroom, especially in the facilitation of improving students' language proficiency (Cooze & Barbour, 2005; Lee & Chong, 2008). SNT comprise of two modes: asynchronous and synchronous. Synchronous tools allow users to "to have real-time written conversation and (is) originally developed to teach English composition and literature to native speakers of English" (Liu, et.al., 2003). Asynchronous tools, on the other hand, allow students time to think and ponder in depth before responding.

Email is an asynchronous tool which helps to decrease concern about students' lacking proficiency in the target language (Kupelian, 2001).

Using email is seen to be a good alternative activity to develop the students' language competency (Dudeny & Hockly, 2007). In addition to that asynchronous activities via email can enhance English language skills, be it in written or oral form (Warschauer & Shetzer, 2000). Therefore, it is hoped that the use of email would have the potential to enhance the learning of grammar. This study is conducted to investigate if using emails could foster the students' grammar learning and explore their experiences in using SNT in learning English.

THE STUDY

The study is based on Kim (2008) on using emails to enable 3E learning (Effective, Efficient and Engaging). The 3E learning emphasises on cognitive and non-cognitive elements. Non-cognitive aspects are interest, motivation, emotions, beliefs, attitudes and efficacy. On the other hand, cognitive aspects are recall, information processing, mental models and scaffolding. The combination of both aspects will help make learning more effective, efficient and engaging. Kim (2008) also said that by reducing the students' anxiety in learning grammar would inevitably gain students' interests and boost their motivation levels. In addition to Kim's (2008) 3E learning model, this study also incorporates the elements of constructivism learning theory in an online learning environment. The constructivist online learning theory advocates collaborative learning as well as student-centred approaches to be implemented

The main purpose of this study is to investigate if the learning of present progressive tense can be fostered through the use of emails. The study also aims at exploring the students' needs and interest in using ICT in their English classroom. The specific objectives for this study are:

- i. How does the utilization of emails help to foster the learning of present progressive tense?
- ii. What are the challenges faced by the students using emails in the learning of present progressive tense?

The study takes on the case study approach as it is an ideal design for understanding and interpreting observations of educational phenomena (Merriam, 1988). This exploratory study is done to have an in depth understanding on how the utilisation of emails help to foster the learning of present progressive tense among primary school students. The study is conducted on five secondary school students from a rural school in Penang Island. The students are from Form One, of average ability and are purposely chosen for the study. The whole duration of the study is five weeks. The data was collected through content analysis (emails exchanges), observations and semi-structured interviews with all the respondents. Prior to the study, the researcher has helped the students to create email accounts for themselves before participating in the research. The research has also helped the students in showing them on how to use the basic tools of email such as composing and replying emails, attaching files, downloading files as well as sending, deleting and editing their files.

A teacher is also involved in the study. The teacher is trained to carry out the email activities and will be involved in the teaching and learning of the grammar items. All tasks are done through email exchanges. The teaching and learning are also done through emails. In the first email, the teacher introduces the grammar items learnt which is the present progressive tenses, through the explanations of forms and functions followed by the examples of usage in sentences. For the first 3 weeks, the students are exposed to the grammar items and they are also given reinforcement activities – all done via email exchanges. Feedback is given by the teacher as well as by the other respondents. Every email exchange will have to be forwarded to everyone in the group and carbon copied to the teacher. At the end of the study, the students need to come out with a pamphlet describing the places of interest in the world. The students need to incorporate sentences describing these places using the present progressive tense. They were given two weeks to complete the task. While they are completing the task, the emails exchanges are still going on.

Findings and Discussions

The data derived from the emails analysis and interview sessions. The data are reduced and coded into different categories.

i) How does the utilization of emails help to foster the learning of present progressive tense?

The findings for this study derive from the emails analysis and interview sessions. The data are then reduced and coded into different themes. For this research question, the researcher employs the *a priori* method whereby the themes are pre-determined using Kim's E3 Learning elements (2008). The three categories proposed by Kim are efficient, effective and engaging. The results from the email analysis and interview showed that the emails can play a positive side in fostering the learning of present progressive tenses.

a. Efficient Learning

The learning becomes more efficient with the utilization of emails. The findings show that students are able to share the information they obtain and collaborate with their friends through email exchanges. In addition to that, the students are also able to interact with their teacher. The teacher provides almost immediate feedback, responding to the emails within 24 hours of receiving emails from the students. The learning becomes more efficient with the fast feedback, be it from the teacher as well as from the other respondents. Using emails has opened up opportunities especially for the introverted students who may be quite reluctant to ask face-to-face questions. Email exchanges also allow the students to ask or respond to queries in their own time, without having the time and space limitation as normal classroom does. Some responses from the students confirm this:

"It was truly an easy approach as I could send the subsequent task at my own pace but most importantly it is easier to get responses from my friends and the teacher. To me, learning is more efficient as there is no pressure to do certain things at certain time."

Respondent 2, Interview

The usage of email has made the students attain other relevant information pertaining to the task easily. For example, they could check their answers and edit their work while being exposed to the examples given by teacher on the grammar items. This is in tandem with the constructivist learning environment which advocates exploration and real examples to facilitate and make learning become more meaningful (Harman & Koohang, 2009).

"...we can use features in emails called spelling checker to check our spelling on the words we used in the present progressive sentences..."

Respondent 1, Interview

"...besides helps me (sic) gaining knowledge of new words by using the present progressive tense. I also know how to use email..."

Respondent 3, Interview

It is interesting to note that the students have developed valuable skills through exchanging emails in learning grammar. The ongoing tasks should improve in terms of the comprehension of the forms and functions of the learnt grammar items. Findings also illustrate that at the end of the study the students are able to use the present progressive tenses correctly and that they are able to differentiate between present progressive tenses and other tenses. This finding is in line with the characteristics shown in the constructivist learning approach whereby knowledge construction is emphasized and students are provided with the opportunity for authentic learning where there is an increasing complexity of tasks, skills and knowledge acquisition (Murphy, 1997 cited in Koohang, Riley, Smith & Scheurs, 2009).

b. Effective learning

Using emails in learning make learning easier and more effective. Students have the freedom to refer and discuss with their teacher and their friends whenever they encounter difficulties in learning the present progressive tenses. The vignettes below illustrate the findings:

"...It is because I can learn new words and if I don't understand I can ask the teacher without have to be in school to do that..."

Respondent 1

"...The features like spelling correction system can contribute to the effective learning process of present progressive tense..."

Respondent 4

"...faster pace of learning...understand the lesson well and it is easier to do the flyer..."

Respondent 5

The use of emails highly motivated the students to learn about the grammar items. They do not feel bored and stressed as they see it as an interactive activity that does not put a lot of pressure on them to perform. The students feel that the teaching through emails makes learning the present progressive tense uncomplicated and easier.

“Through the task given by using email, I feel that it has really improved my usage of present progressive tense...”

Respondent 3

“...when you want to type and email somebody you must use the present progressive tense in your email so this encourages you to use it more and practice...”

Respondent

4

“...it can be effective like when I attempt to use the present progressive tense when writing emails to my family member so in a way it can improve my English...”

Respondent 1

From the above vignettes, it seems that students can easily grasp the knowledge if the teaching and learning is effective and efficient. As cited by Timucin (2006), the only instance in which the teaching and learning of grammar can result in language acquisition is when the students are engaged and interested in the subject. Emails covers student-autonomy value, inspires student-centered interactions, resulting in greater personal and expressive use of language (Mansor, 2007).

c. Engaging learning

The researcher notices that the utilization of emails is well accepted by the students because it offers something different from the ordinary and it is fun, too. This definitely added the extra value in the learning of present progressive tense as the students are engaged and are more focused towards the task given.

“It helps me understand the present progressive tense by the task that the teacher gives ...”

Respondent 2

“...I think it makes us more focus on the task and by using the emails and other friends you can complete your work faster...”

Respondent 3

"...classroom can be noisy and distracting..Internet is much more quieter and can concentrate more..."

Respondent 5

Therefore, in designing activities, teachers should also be aware of types of students and this will help teachers to cater to different needs of students. Vinaagre (2005) posits that the learning experience should be enjoyable and engrossing and emails can be the starting platform to offer such qualities to the teaching and learning.

Shipton and Shipton (2006) have mentioned that learning grammar through the conventional methods will make the students confuse by the abstract concepts of grammar rules and their applications. The findings from this study has ,however, highlighted that infusing emails in learning ESL grammar can help in making students understand both the concepts and the applications as well as elevating the feeling of boredom every time a grammar lesson takes place.

d. Out of the ordinary

An approach that is totally out of the norm has made them very curious to know what other discoveries that they might come across in the process of learning the present progressive tenses. Thus, they are prone to explore new dimensions of instructions by themselves and very limited assistance from the teacher. Below are some excerpts that illustrate the findings:

"...an interesting and new way to study.."

Respondent 4

"...The email also is a new way to teach the pupils so pupils will feel fun to learn English..."

Respondent 1

The utilization of emails succeeded in fostering excitement in the students' excitement although learning this particular grammar item is a new lesson for them. The excitement propels them to become more focus and engaged in the task assigned. This finding is in line with Jonassen (1995) who advocates that learning needs to be active and authentic in order for it to be meaningful. When learning is meaningful, students will acquire the language faster and easier.

According to Zuwati (2005), the use of email could also promote meaningful and interactive discussions between the teacher and the students as well as among the students. She further elaborates that social networking tools are valuable to the language teaching and learning because these tools encourage and motivate students, promote autonomous learning as well as integrate the other skills needed in language learning. In addition to that, social networking tools are also capable of providing immediate feedback and allow self-paced learning.

It is observed that the students could share their thoughts with their peers via emails especially the introverted students who are reluctant to ask questions or share their ideas openly in face-to-face classroom. Having social networking tools such as the emails could allow the expansion of knowledge seeking and advocate individualized learning which prepare the students for the outside world and promote lifelong learning.

All of the respondents agree that using emails make the learning and tasks execution easier and effective as the students are not bound by time to complete the tasks in the classroom. The interaction is not confined and limited to the classroom. This is parallel to Gingerman and Bernard (2004) who agree that using email will allow the respondents to maintain close relationships with one another. Overbaugh (2002) adds that using emails in language learning could also result in an efficient way to communicate and interact with others.

Another prominent finding is that the students feel email could contribute to a faster pace of learning. This means that using emails will make them understand the grammar lesson easier and quicker. The students further iterate that the email exchanges offer them a conducive learning environment that enables them to start immediately on tasks given.

The different style of learning has resulted in a positive impact towards the students' learning of the present progressive tense. According to Petty, Johnston & Shafer (2004), using emails in learning grammar is able to provide more opportunities to enjoy the lesson and at the same time offer flexible access to the students. Students will have a meaningful learning process if they have more opportunities to interact with authentic, contextualized and linguistically challenging activities as well as materials in academic contexts (Kasper et. al, 2000).

ii) What are the challenges faced by the students in using emails in the learning of present progressive tense?

Although the above section highlights the benefits and advantages the students gain from using emails in learning grammar, there are also some challenges faced by the respondents while doing so.

Even though initially, the students claim to have knowledge and skills in using emails, surprisingly prior to the study it is found that 80% of the students do not know how to use the special features in emails, such as attaching and downloading files. The teacher spent a few lessons training them on the basic application tools of the emails until all of them are familiar with the applications. After the training and a few practices, the students have the grasp on using the applications in emails. Some of the responses from the respondents on the difficulties they face are illustrated below:

"...don't know how to attach photos and sometimes videos..."

Respondent 3

"... difficult to put pictures or songs, don't know how..."

Respondent 2

"...don't know how to change wordings..."

Respondent 5

Another challenge encountered by the students during the study is the sporadic interruption of Internet. As they are using broadband and wireless, the Internet reception is not fully reliable at times. However, this difficulty does not dissuade the students from learning and completing their tasks. From the responses of the students, the most challenging aspects of this study is familiarising themselves with the use on social networking tools in the learning process. This is due to two main reasons:

- a. grammar lessons are usually done in normal classroom through face-to-face interaction

Learning using the social networking tools or the Internet is a fairly new thing to the students. Most of the time, learning English is done in normal classroom. Thus, learning grammar is done mostly the conventional way. Although it take some time for the students to be familiar with ICT in English learning, once they are used to it, the students enjoy the lessons. They even express hopes that there will be more ICT based English lessons in the future.

"...it will be nice if English class will have more computers and Internet..."

Respondent 1

"...grammar will be easy to learn with emails and maybe other program like Facebook. Hope the teacher will teach English and use ICT in English lesson..."

Respondent 4

"...maybe once in a while we can use the computer to do English exercises..."

Respondent 2

"...better if other subjects also use Internet in the lessons, more fun..."

Respondent 5

- b. 60% of the students have never used emails for learning and acquiring knowledge purposes other than to access to *Facebook* as *Facebook* requires the member to have an email account. These students do not even check their emails once their accounts have been set up and they rarely use the emails as means of communication. As mentioned by Respondent 5 who says that *"I only had email to access FB and to play online games."* Therefore, this study has shown the students that there are so much more they could do in terms of learning using emails. Not only they gain knowledge by utilising email in the learning of present progressive tenses, they have also improved their ICT skills especially the basic email application skills. The students are now able to attach videos, songs and images in their emails.

Conclusion

This study has provided valuable insights into the use of emails in fostering the learning of grammar – the present progressive tense. The respondents of the study are seen to produce high interest in learning grammar through email exchanges. Social networking tools can be valuable and beneficial assets in language learning if utilised properly and effectively. Teachers need to infuse ICT in the classroom so as to vary the teaching method and gauge students' attention. Doering, Hughes & Huffman (2003) have highlighted that infusing technology in the language learning classroom can reap benefit and add value to achieving learning goals, motivating learners and advocating learner autonomy, if executed correctly. This study has shown that students enjoy the online interaction.

The removal of time barrier also helps in providing an engaging, effective and efficient learning environment for the students. Despite the initial challenges faced by the students, the outcome of this study shows positive responses towards the infusion of social networking tools in ESL lessons. Therefore, it is essential for teachers to subsequently find ways to integrate ICT especially social networking tools in their ESL classroom as the tools will definitely help in making the teaching and learning of English more effective, efficient and engaging.

Acknowledgement : Sincerest appreciation and gratitude to Universiti Sains Malaysia (USM) for making this research possible. This study is supported by the USM incentive grant.

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Attitude Of B.Ed. Students' Towards Odl Institutions In Tamil Nadu Open University

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ABSTRACT

The present study aims to probe the attitude of B.Ed. students' towards ODL institutions in Tamil Nadu Open University. Survey method was employed in the present study. A sample of 293 B.Ed. students studying in Tamil Nadu Open University was selected by simple random technique. The data was collected by Students' Attitude and Perceptions Rating of Open and Distance Learning Institutions Inventory (SAPRODLII) developed by Ojo, D. O., & Olankulehin, F. K. (2006). SPSS-17 Package was used for analysis of the collected data. The Percentile analysis, mean, standard deviation, level, t-test, ANOVA and chi-square were employed as statistical techniques to analyse the data. The findings show that (1) the attitude of B.Ed. students towards ODL institutions in TNOU is neutral, (2) there is no significant difference in the attitude of B.Ed. students towards ODL institutions in TNOU in terms of (i) gender, (ii) locality and (iii) teaching experience, (3) English medium students are having favourable attitude towards ODL institutions in TNOU than Tamil medium students, (4) Language subject students are having favourable attitude towards ODL institutions in TNOU than arts and science subject students, and (5) there is significant association between age of the B.Ed. students and their attitude towards ODL institutions in TNOU.

Keywords: Attitude of B.Ed. students, ODL institutions, TNOU, Tamil Nadu Open University.

INTRODUCTION

India has the second largest educational system in the world after China (Cheney et al., 2006, p.1). Although the Indian education system is the world's largest, the country also has the maximum number of illiterates (Mujumdar, n.d., p.1). The Gross Enrolment Ratio (GER) in Higher Education, which was 11% in 2005-06, almost got doubled to 19.4% in the year 2010-11. The GER for women in Higher Education increased from 9.4 to 17.9% during the same period (Singh, M., 2013). The GER in higher education in Tamil Nadu currently stands at 19%, a 1% point increase from the 11th plan period. The GER of marginalized sections of society in the context of social and gender is even less than 6% (Pokhriyal, n.d., p.1).

Open and Distance Learning (ODL) in the higher education sector contributes to about 24% of the total enrolment. The aim of Tamil Nadu government is to make it as 21% by 2017 and 25% by 2025 (Thyagarajan, n.d., p.4). The Indian Government has ambitious plans of increasing this to 40%. India has only one central Open University, namely, Indira Gandhi National Open University (IGNOU). Each State also has a State Open University setup by the local State Government. In spite of this and due to the need of educating huge population of the masses, many private, un-aided distance education providers have mushroomed in all corners of India (Mujumdar, n.d., p.1).

TAMIL NADU OPEN UNIVERSITY

The Tamil Nadu Open University (TNOU) was established to benefit those who have been deprived of and/or denied the access to higher education especially destitute, physically challenged, working men and women, economically weaker sections of the society, and those who discontinued education for various reasons, etc. In the main, it aims to reach the hitherto unreached.

Tamil Nadu Open University offers 2 years B.Ed. programme through distance mode since 2004. A total of 500 students were admitted through 5 programme study centres (PSCs) by English medium since 2004. After 2006, the university has admitted an addition of 500 students through Tamil Medium. So, now totally 1000 students are pursuing their B.Ed. programme through 10 PSCs. In TNOU, the B.Ed. programme mainly concentrates to improve the quality of teaching competency and inculcate the innovative teaching strategies for the already employed/ working teachers in the schools of Tamil Nadu. The main feature of the B.Ed. programme is to help the teachers to study while working in various schools of Tamil Nadu without affecting their teaching career.

SIGNIFICANCE OF THE STUDY

Tamil Nadu Open University is the first university to conduct B.Ed. programme through distance education in the state since 2004. Till today, roughly 9,000 students have completed their 2 years B.Ed. degree programme through distance mode. All are teachers working in schools of Tamil Nadu and among them 95% of them are working in government and government aided schools. Tomorrow's nation depends upon the type of citizens trained and educated today in the temples of learning. Humayun Kabir said, "Teachers are literally the arbiters of a nation's destiny" (Kochhar, S. K., 1971, p.153). The role of primary and secondary school teachers are very important. They are like potters moulding the habits and behaviour of a child according to needs and aspirations of the society. It needs no description that the teachers are the pivot of any educational system of the younger students. On them rests the failure or the success of the system. If the teachers are well educated and are intellectually alive and take keen interest in their job, success will be ensured. But if on the other hand, they lack training in education and if they cannot give their heart to their profession, the system is destined to fail. Taking this in mind, the investigator aims to study the attitude of B.Ed. students towards ODL Institutions in Tamil Nadu Open University.

Title of the Study

Attitude of B.Ed. Students' towards ODL Institutions in Tamil Nadu Open University.

OPERATIONAL DEFINITIONS

Attitude

Attitude is a tendency to show favour or disfavour for ODL institutions in TNOU. It is the amount or degree of positive or negative feelings towards ODL institutions in TNOU.

B.Ed. Students

The students studying their B.Ed. degree programme through distance mode in Tamil Nadu Open University after completion of their UG/PG degree.

ODL Institutions

Open and Distance Learning Institutions approved by the Tamil Nadu Open University as Programme Study Centres in Tamil Nadu.

Tamil Nadu Open University

Tamil Nadu Open University is the 10th Open University in India established by the Legislative Assembly of Tamil Nadu State Government Act 27 of 2002 in Chennai.

METHODOLOGY

In the present study survey method was employed. A sample of 293 B.Ed. students studying in Tamil Nadu Open University was selected by simple random technique. The data was collected by Students' Attitude and Perceptions Rating of Open and Distance Learning Institutions Inventory (SAPRODLII) developed by Ojo, D.O., & Olankulehin, F. K. (2006). SPSS-17 Package was used for analysis of the collected data. The Percentile analysis, mean, standard deviation, level, t-test, ANOVA and chi-square were employed as statistical techniques to analyse the data.

OBJECTIVE

1. To find out the level of attitude of B.Ed. students towards ODL institutions in TNOU.
2. To find out if there is any significant difference in the attitude of B.Ed. students towards ODL institutions in TNOU in terms of background variables- (i) gender, (ii) locality, (iii) medium of study, (iv) major subject, (v) teaching experience and (vi) age.

NULL HYPOTHESES

1. There is no significant difference between male and female B.Ed. students in their attitude towards ODL institutions in TNOU.
2. There is no significant difference between rural and urban B.Ed. students in their attitude towards ODL institutions in TNOU.
3. There is no significant difference between Tamil and English medium B.Ed. students in their attitude towards ODL institutions in TNOU.
4. There is no significant difference among arts, science and language subject B.Ed. students in their attitude towards ODL institutions in TNOU.

5. There is no significant difference among below 10 years, 11 to 20 years and above 21 years experience having B.Ed. Students in their attitude towards ODL institutions in TNOU.
6. There is no significant association between age of the B.Ed. students and their attitude towards ODL institutions in TNOU.

DATA ANALYSIS AND RESULTS

Table – 1

Level of B.Ed. Students’ attitude towards ODL institutions in TNOU

Negative		Neutral		Positive	
N	%	N	%	N	%
67	22.9%	175	59.7%	51	17.4%

It is inferred from the above table that the attitude of B.Ed. students towards ODL institutions in TNOU is neutral.

FINDINGS AND INTERPRETATIONS

H₀ 1: There is no significant difference between male and female B.Ed. students in their attitude towards ODL institutions in TNOU.

Table – 2

Difference between Male and Female B.Ed. Students in their attitude towards ODL institutions in TNOU

Gender	N	Mean	SD	Calculated ‘t’ Value	Remark at 5% level
Male	92	40.32	5.045	1.38	NS
Female	201	41.23	5.310		

At 5% level of significance the table value of ‘t’ is 1.96

It is inferred from the above table that there is no significant difference between male and female B.Ed. students in their attitude towards ODL institutions in TNOU.

H₀ 2: There is no significant difference between rural and urban B.Ed. students in their attitude towards ODL institutions in TNOU.

Table – 3

Difference between Rural and Urban B.Ed. Students in their attitude towards ODL institutions in TNOU

Locality	N	Mean	SD	Calculated 't' Value	Remark at 5% level
Rural	172	41.10	5.154	0.63	NS
Urban	121	40.71	5.366		

At 5% level of significance the table value of 't' is 1.96

It is inferred from the above table that there is no significant difference between rural and urban B.Ed. students in their attitude towards ODL institutions in TNOU.

Table – 4

H₀ 3: There is no significant difference between Tamil and English medium B.Ed. students in their attitude towards ODL institutions in TNOU.

Difference between Tamil and English medium B.Ed. Students in their attitude towards ODL institutions in TNOU

Medium of Study	N	Mean	SD	Calculated 't' Value	Remark at 5% level
Tamil	183	40.42	5.190	2.21	S
English	110	41.81	5.223		

At 5% level of significance the table value of 't' is 1.96

It is inferred from the above table that there is significant difference between Tamil and English medium B.Ed. students in their attitude towards ODL institutions in TNOU. English medium students (M=41.81) are having favourable attitude towards ODL institutions in TNOU than Tamil medium students (M=40.42). This may be due to the fact that English medium students easily get enormous learning materials from internet and books. At the same time, the Tamil medium students do not get enough learning materials for their further references.

H₀ 4: There is no significant difference among arts, science and language subject B.Ed. students in their attitude towards ODL institutions in TNOU.

Table – 5

Difference among Arts, Science and Language Subject B.Ed. Students in their attitude towards ODL institutions in TNOU

Source of Variation	Sum of Squares	df	Mean Square	Calculated 'F' Value	Remark at 5% level
Between	83.861	2	41.931	3.535	S
Within	7924.152	290	27.325		

At 5% level of significance, for (2, 290) df the table value of 'F' is 3.03

It is inferred from the above table that there is significant difference among arts, science and language subject B.Ed. students in their attitude towards ODL institutions in TNOU. Language subject students (M=41.21) are having favourable attitude towards ODL institutions in TNOU than arts students (M=40.30) and science students (M=39.60). This may be due to the fact that the B.Ed. students in ODL do not have enough time to spend with the instructional resources such as laboratory, library, etc. So that, the arts and science students may have unfavourable attitude towards ODL institutions.

H₀ 5: There is no significant difference among below 10 years, 11 to 20 years and above 21 years experience having B.Ed. Students in their attitude towards ODL institutions in TNOU.

Table – 6

Difference among below 10 years, 11 to 20 years and above 21 years experience having B.Ed. Students in their attitude towards ODL institutions in TNOU

Source of Variation	Sum of Squares	df	Mean Square	Calculated 'F' Value	Remark at 5% level
Between	46.598	2	23.299	0.849	NS
Within	7961.416	290	27.453		

At 5% level of significance, for (2,290) df the table value of 'F' is 3.03

It is inferred from the above table that there is no significant difference among below 10 years, 11 to 20 years and above 21 years experience having B.Ed. Students in their attitude towards ODL institutions in TNOU.

H₀ 6: There is no significant association between age of the B.Ed. students and their attitude towards ODL institutions in TNOU.

Table – 7

Significant association between Age of the B.Ed. students and their attitude towards ODL institutions in TNOU

Age	Positive		Neutral		Negative		df	Calculated 'χ ² ' Value	Remark at 5% level
	O	E	O	E	O	E			
Below 35 years	10	13.9	35	36.4	16	10.6	4	9.75	S
36 to 45 years	42	40.6	106	106.9	31	31.2			
Above 46 years	15	12.1	34	31.7	4	9.1			

At 5% level of significance, for 4 df the table value of 'χ²' is 9.488

It is inferred from the above table that there is significant association between age of the B.Ed. students and their attitude towards ODL institutions in TNOU. 36 to 45 years old students (M=41.16) are having favourable attitude towards ODL institutions in TNOU than below 35 years old students (M=41.07) and above 46 years old students (M=40.06). This may be due to the fact that those who above 46 years are unable to pick up the modern technologies and innovative strategies followed in the ODL institutions and those who below 35 years are very familiar with these technologies and they feel monotonous.

CONCLUSION

From the above study, it is clearly recognized that the attitude of B.Ed. students towards ODL institutions in TNOU is neutral. So, the authorities of Tamil Nadu Open University and faculties of School of Education in TNOU have to take necessary planning and action in order to improve the attitude of B.Ed. students. Tamil medium students should be given additional learning materials for further references and to strengthen their knowledge. ODL institutions of TNOU should give laboratory based methods of teaching and learning such as demonstration, computer assisted instruction, etc. Furthermore, all ODL institutions should give priority to Learner Centred Methods like brainstorming, role playing, discussion, buzz group, study assignment method, seminar and programmed instruction method. The ODL institutions should not halt at the teaching of the B.Ed. students more than that they should mould the students' life forever. So, they should train them for all-round development activities such as providing computer knowledge, value education, stress coping management, time management, emotional intelligence, etc.

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E-Book As Learning Tool: A Review And Focus For Future Research

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ABSTRACT

This is a conceptual paper to study the use of e-book as a learning tool. The study reviews literature on the basic concepts of e-books. The paper discusses and analyses on previous studies about e-book and its use in education especially in teaching and learning process. The findings include multiple definitions of e-book, the limitations and advantages that appears to be the most influential in its use in the learning process and whether users perceptions of e-book use has changed over time. This paper ends with discussions on the existing gaps in e-book research and suggestions for future research on how e-book could be used and explored as a teaching and learning tool.

Keywords: e-book, teaching and learning, tool

INTRODUCTION

E-books are the most important development in the world of literature after Gutenberg and are forecast to change the reading habits over the next several years (Rao, 2001). As a new developing technology, the e-book had a bumpy start with limited success in the past, and there are still lack of standards in platforms (Bry & Kraus, 2002; Lee, Guttenberg & McCrary, 2002), business models and metadata that need to resolved (Pomerantz, 2010; Rao, 2005).

However, previous researches have shown that the growth rate in the production and demand of e-books has grown by approximately 20 per cent in the last few years (Just, 2007; Alvite Diez & Rodriguez Bravo, 2009). Furthermore, the sales statistics offered by both American Publishers Association (APA) and International Digital Publishing Forum (IDPF, 2009; APA, 2009) confirmed this trend of increasing sales with a very significant growth last years. These figures seems to indicate that e-book is increasingly accepted (Pomerantz, 2010) and authors such as Sharp (2005) and Underwood (2010) have even identified e-book as wave of the future and will simply be adopted by younger generations.

The rapid growth of e-book sales along with the use of computer-based learning materials has gradually challenging the supremacy of books in education (Garland and Noyes, 2005). The use of these learning materials increases the potential of using e-books as learning tools as suggested by a report from the Scottish Executive Education Department (SEED, 2002). The report suggests the use of computer and technology within curricular areas as a mean to support learning and teaching. This view is also supported with another research by Passey, Rogers, Machell and Mchugh (2004) which claims that in order to maximize enthusiasm among students, computer and technology needs to use not only in subject-specific ways but also to embed in both the teaching and learning process.

The aim of this paper is to explore the basic concept of e-book, followed by earlier studies on e-books which discussed the limitations and advantages of using e-book as a learning tool. The author does so through extensive literature review from major journals from all over the world. At the end of the paper, the author will suggest gaps of current research and arrange for directions for future research.

BASIC CONCEPT OF E-BOOK

The introduction has stated that e-books are becoming a growing trend among readers all over the world. Is there a common definition of e-book as described in the literature? What do we understand about e-book and how does e-book differ from the printed book? This section focuses on providing explanations to the questions from the different perspectives available in the literature review.

The author made various attempts in the literature to define the e-book. Naturally, these definitions mainly follow the mainstream dimension of book evolution which is digitization that started since Project Gutenberg in 1971. Therefore, many authors (such as Lynch, 1999; Rao, 2003; Saurie & Kaushik, 2001; Cox & Mohammed, 2001; Lee, 2002) refer e-book as a text that is available in the electronic format. However, this is a very broad definition to consider with the evolving technological landscapes around the 21st century.

Although the idea of e-book has existed since 1960s, there is still much confusion about a basic definition of an e-book (Gold Leaf, 2003; Tedd, 2005; Bennett & Landoni, 2005). Hughes (2003) has stated that the e-book definition has been the subject of renewed interest, "involving more complexity than that of merely any digital text read via a glass screen". While, Carreiro (2010) suggested that the unsolidified definition surrounding e-book is the cause of this problem. Consequently, an understanding of the term book may be an ideal starting point in order to further understand the term e-book.

According to Rao (2001), the term book denotes both message (words and images) and medium (bound paper). In principle an e-book is quite similar to a print book which the medium is different either paper or electronic (Van der Velde & Ernst, 2009). Ardito (2000) describes how Andries Van Damm coined the phrase "electronic book" in 1967 as the concept that refers to both the electronic content and the computerized device used to store and retrieve the content. In summary, there are three basic elements that define e-book (Lynch, 2001); content, hardware and software which would be used as a baseline for further explanations in the following sections.

Content of e-book

The transformation of paper book into digital e-book allows reduction of hundred pages of a book into a one-page screen. This characteristic offers the possibility of delivering knowledge that is cheaper, faster and more effective. The content of e-books maybe can be different from books and not tied to a physical object for representation or distribution (Wilson, Wilson & Gibb, 2000; Hillesund, 2001). This section will elaborate on the content element which is usually intertwined with software element through their types, format, and available features.

Various authors (such as Barker, 1999; Crawford, 2000; Anuradha & Usha, 2006) suggested that contents play a vital part to differentiate the types of e-book. Among the different types of e-book mentioned by Barker (1999) included (a) textbooks which contain linear text; (b) picture books which contain various sorts of static pictures; (c) talking books which depends primarily on the use of audio narrations and sound effects; (d) moving picture books which contains different types of motion pictures; (e) multimedia pictures which is the combination of three media elements such as text, sound and picture; (f) polymedia books which involve the use of several different media types; electronic and non-electronic media; (g) hypermedia books which is very similar to multimedia books and embeds non-linear information structures; (h) intelligent e-books; (i) telemedia books; and (j) cyberbooks.

Apart from the different types of e-book, contents of e-book can also be in different formats such as PDF, HTML, LIT or RTF (Norshuhada, Ladoni, Gibb & Shahizan, 2003). These different formats are commonly referred to as the software that enables various e-books file format to be displayed and used. Among the well-known formats are mentioned by Cavanaugh's (2005) as the "Big Five" which includes plain text (TXT), web

(HTML/XML), Adobe Reader (PDF), Microsoft Reader (LIT) and eReader (PDB). This makes the content of e-book much more versatile and flexible than the traditional printed book. In addition, it also enables content of an e-book to be indexed and easily searched through search engines, the library catalogue or the publisher platform.

In terms of content features or innovativeness, Landoni, Catenazzi and Gibb (1993) has investigated whether the usability of electronic contents can be increased further by altering the presentation of the content to suit the electronic medium. Another form of innovativeness for e-book is the “augmented book” (Yang, Cho, Soh, Jung & Lee, 2008; Dünser & Hornecker 2007; Grasset, Dünser & Billingham 2008; Ucelli, Conti, Amicis and Servidio 2005; Park and Woo 2010; Farbiz & Cheok, 2005) which is augmenting a book experience by adding some dimensions or functionality to the traditional book or e-book. Currently, there have been researches on building 3D model of e-books for more natural and convenient reading (Chu, Bainbridge, Jones & Witten 2004; Hong, Chi & Card 2005; Almeida, Cubaud, Dupire, Natkin & Topol 2006). However, the limitation of current innovations in e-book is that most e-books only transform the two dimensional pages of the paper book into two-dimensional electronic book.

Accessibility of e-book

Recent development in e-book is the emergence of e-book hardware and services integrated as a product service system. The integration has influenced authors (such as Goh, 2002; Lynch, 2001) to indicate e-book as the combination of electronic text and electronic reading device (the medium used to read the document content). Consequently, other authors (such as Lynch, 1999; Wilson & Landoni, 2001) have also mentioned a move towards a more flexible hybrid system which enable transformation of portable computer to an e-book reading device. The next section will elaborate more on the hardware element of e-book in terms of the e-book reader and the accessibility models.

According to Cavanaugh (2003), e-book readers are devices that serve as hardware for e-books and reading materials. Basically, these e-book readers are the devices used to read e-books; these could be handheld or not, dedicated or not; the software that enables the display of e-books on PCs or other devices may be referred to as e-book reader software, even though some software companies such as Microsoft refer to their applications as readers (NetRead, 2000). Most e-book readers are associated with publishers such as Amazon.com’s Kindle, Barnes & Noble’s Nook, Apple’s iPad with iBook.

The four major accessibility model of e-book as mentioned by authors (such as Rao, 2004; Hawkins, 2000; Anuradha & Usha, 2006) are;

- a. e-books can be downloaded by readers to their computers without any special requirements or the need of using special reading devices ;
- b. dedicated e-book readers requires dedicated hardware device with a high-quality screen and special capabilities for book reading;
- c. web-accessible e-books are e-books with contents that are published on provider’s Web site and may be accessed for a fee or purchase books to receive indefinite access ; and
- d. print-on-demand books are e-books with contents that are stored in a system connected to a high-speed, high-quality printer and bound copies are produced on demand.

We can therefore conclude that there are so many definitions of e-book that emerges from the basic concept discussed such that no definitive answer is possible. In addition, the term e-book is often used simultaneously to describe content, software and hardware. However as noted by Rao (2001) "Any definition of terms would be slightly problematic until technology and practice settle down long enough for language to catch up".

THE USE OF E-BOOK FOR TEACHING AND LEARNING

Although early forms of electronic books have been available for almost two decades, studies examining how students interact with and respond to e-book texts are still few and results are somewhat conflicting (Larson, 2010). Exploring the potential use of e-book in the teaching and learning process, researchers have studied who, how, where, and why they have been used.

There have been numerous studies of who uses e-books. Fasimpaur (2004) proposed that students find e-books to be "a new and unique medium" and as a result students often read more when having access to e-books. E-book have been used by young readers (Doty, Popplewell & Byers, 2001; Grimshaw, Dungworth, McKnight & Morris, 2007), undergraduate students in nursing (Appleton, 2004, 2005), economics, and literature (Hernon, Hopper, Leach, Saunders & Zhang, 2007), students in the humanities (Levine-Clark, 2007), graduate students (Vernon, 2006; Letchumanan & Tarmizi, 2011; Rowlands, Nicholas, Jamali, & Huntington, 2007) and were most popular among academicians, and both special libraries and public libraries (Armstrong, Edwards & Lonsdale, 2002; Berglund et al., 2004; Blummer, 2006). Consequently, e-book has been used in the teaching and learning process by various types of students and academic institutions.

There have been contradictory results from studies about students' comprehension and learning through reading text on a computer screen, as compared to reading text from a printed page. Studies by De Jong and Bus (2002, 2003) demonstrated that reading text on a computer screen is less effective. However, studies done by Doty, Popplewell and Byers (2001) mentioned that reading text on a computer screen gives a more effective result in terms of student comprehension and learning. Finally, studies by Annand (2008), Maynard and Cheyne (2005) and Grimshaw et al. (2007) did not find any difference in both methods being studied. The contradictory findings emphasize the need for further research on the impact of electronic book and electronic text on the overall learning experience.

Studies have focused on finding the purpose of using e-book among readers. The result clearly shows that readers mostly use e-book as an added learning tool. According to Noorhidawati and Gibb (2008), students use e-book for four main purposes; fact-finding, finding relevant content, selective reading and extended reading. Their findings show that most popular reason for using e-book is "finding relevant content" which is in line with Gunter (2005) who stated that early e-book usage was primarily for reference work and not reading for leisure and entertainment. The second most popular reason was for "selective reading". This would shows that e-books are not read in their entirety but instead are search for or used for reference purposes. This observation is supported by Letchumanan and Tarmizi (2011) study that shown that students prefer to use e-books for their research work than as course textbook as e-books are easier to find and easy to manage for their research work.

Previous studies have concluded the usability of e-book among various groups of readers. However, careful attention should be given to e-book effect on different age groups. Furthermore, most of the researchers consolidated on the use of e-book as additional reference tool as opposed to being the main textbook. The following section will focus on studies regarding the potentials of e-books especially in the teaching and learning process.

Potentials of e-books

In order to find the potential of e-books, several studies are reviewed. E-book is mainly seen as an effective learning supplement which has the ability to increase students' previous knowledge and motivation. Furthermore it could also provide attractive and interactive supporting features along with fast and large available resources of information to be used by students in both their leisure and academic activities.

Cavanaugh (2003) stated that educators and technologist have started to consider the possibilities of e-books as a realistic, potentially effective medium for learning. Appleton (2005) quoted, "With printed textbooks being well integrated into traditional teaching and learning in higher education, the next obvious resource to embed into virtual learning would be the e-book". This view is being seconded by Rothman (2006) who quoted "If ever a promising technology existed for education and distance learning in particular it would be e-books". In a more recent study that was carried out by the JISC e-book observatory project between June 2008 and June 2009 in which more than 40,000 students took part, the participants considered e-books as an excellent reference tool, a supplementary reference or as a complement instead of an autonomous solution (Stelle & Woodward, 2009).

Recent statistics (International Digital Publishing Forum, 2011) indicate that educational e-books are positioned for rapid growth as digital texts become prevalent (Guess, 2008a, 2008b). Hence, e-books have predominantly been used by both average consumers and students for pleasure reading and leisure reading (Rowlands et al., 2007). As a result, students may have prior experience using e-books while enrolled in higher education institutions, which is important because prior knowledge facilitates the learning process (Levine-Clark, 2006; Rowlands et al., 2007). However, this finding contrasts with other researches where a majority number of students had no prior experience in using e-book prior to the conducted studies (Noorhidawati & Gibb, 2008; Ismail & Awang Ngah, 2005; Chu, 2003; Bennett & Landoni, 2005; Anuradha & Usha, 2006).

The use of e-books can increase students' motivation. Most educators would agree on the fact that current students only read books in order to pass an exam or solve assigned homework problems. In other words, there is little motivation or interest for students to read a printed book compared to e-book. According to Miller (2005) students are quick to adapt the concept of digital learning, multitasking with computers, integrating self-instruction, enhancing instructors' expectations of the assignments and motivating them to learn more.

Younger generation typically welcome e-book as they feel more comfortable with the additional features offered by e-book such as abilities to search and highlight text, make notations and to bookmark pages and dictionaries (Hodas et al., 2001; Rao, 2003). Moreover, electronic textbooks include video and interactive elements that significantly enhance the electronic textbook as learning and teaching tool. Sharp (2005) who explored the use of electronic textbooks in a university setting also recommend this in his article. Fordham College also conducts a similar study with undergraduate biology students (Simon, 2002). In terms of satisfaction, majority of student stated that they would recommend using e-books in college courses to a friend, and the remaining stated that they wished other courses also offer e-book materials for student.

Other authors such as Noyes and Garland (2006) have further suggested that system developers and interface designers together with the educators should pay more attention to the usability features of the computer because their study revealed that respondents liked the interactive element of using computers. The e-book remote access, easy usage within a virtual learning environment and allowing multiple readers to be able to use it anytime, anywhere (Appleton, 2004; Long, 2003; Rao, 2003). According to Cavanaugh (2002), this enables accessibility, giving professionals or teachers the ability to access the materials without having to rework or modify the content into another medium.

Another aspect of e-books that has the most potential is the amount of available materials. Cavanaugh and Cavanaugh (2008) mentioned that there are over 240 e-book libraries that support thousands of titles. The vast level of availability allows educators to leave the costly and quickly outdated traditional textbook materials for free and accessible electronic materials (Cavanaugh, 2004; Weber & Cavanaugh, 2006). This move could serve as a positive, economical-solution for students and create a positive impact on current conception and the use of the e-book in teaching and learning.

Challenges in adopting e-books in teaching and learning

E-book as with other technological innovation is not without limitations. The current challenges in adopting e-books in teaching and learning from the literature includes user preferences to the printed book, lack of navigational interaction due to poor design factors, user attitudinal preference of traditional printed books, visual problem faced by readers when reading the e-book and the similarities of current e-book design with the old and traditional printed book metaphor. Several authors (Appleton, 2004; Anuradha & Usha, 2006b; Ismail & Awang Ngah, 2005; Roesnita & Zainab, 2005; Vernon, 2006; Chong, Lim & Ling, 2008; Noorhidawati & Gibb, 2008, Noyes & Garland, 2006; Woody & Baker, 2010) have explored the differences between printed books and e-books. The findings indicated that students found e-books were not an effective learning material compared to printed books (Appleton, 2004). Several reasons for the low usage identified with the main reason as being students preferences by using printed books compared to e-book (Anuradha & Usha, 2006a; Ismail & Awang Ngah, 2005; Roesnita & Zainab, 2005; Noyes & Garland, 2006; Liu, 2006; Slater, 2009). These preferences confirmed through results of studies (Malama, Ladoni & Wilson, 2005; Wilson, Ladoni & Gibb, 2000) which indicate e-books that adherence to the paper books metaphor increases users' subjective satisfaction and overall usability of the e-books as users' expectations from e-books which inherited from their experience with printed books.

Authors have also mentioned other reasons such as lack of user friendliness (Noyes & Garland, 2006), cost, the relative quality of content and lack of promotion and encouragement of use (Appleton, 2004). Ismail and Awang Ngah (2005) described the lack of knowledge on how to use e-books as the reason of low usage. Chong et al. (2008) proceedings paper which discusses the Multimedia University e-book provision program in Malaysia has identified hardware and onscreen design factors such as troubles in installing specific reader, difficult to read from a computer screen, troubles in downloading the e-books and slow loading speed are hindering many users from using e-books. The authors also mentioned onscreen design problem such as difficult to navigate through the e-book (Vernon, 2006), difficult to scan from the e-book and difficult to find relevant information also discouraging many from using e-book. Other factors are time constraint and variety of study strategies (Vernon, 2006).

In a follow up study by Noyes and Garland (2006), the participants mentioned that they prefer to read from printed books because the pages of a book are easier to move through, less complicated, easier to annotate, highlight, bookmark, easier to digest, follow and understand. Moreover, many respondents also stated that they prefer to use book because of the tradition where they noted that they have been brought up with book and more familiar with the book. Meanwhile, many of the respondents stated that they prefer not to read from computer because of the visual problem and the information provided is not reliable as compared to reading from printed books.

This visual problem has also been mentioned by other authors (Blummer, 2006; Hernon et.al, 2007; Levine-Clark, 2007). They argued that most e-book readers only read short sections of e-books rather than reading the whole complete text online. This finding is in tandem with Vernon (2006) which revealed that online reading was physically more strenuous for students as opposed to reading a traditional textbook and prior studies which have shown that level of content assimilation for online reading is lower (Example: Dillon &

Gabbard, 1998; Bellaver & Gillette, 2004; Landoni & Hanlon, 2006; Kang, Wang & Ling, 2009) and level of cognitive load is higher (Wästlund, Reinikka, Norlander, & Archer, 2005). While author such as Clyde (2005) is concerned that students might face difficulties in understanding the content which being read in a digital form. Letchumanan & Tarmizi (2011) study found that participants found that reading through screen affects their retention of subject content, that it is having difficulties to recall the content when reading through the screen.

In a recent research, Woody and Baker (2010) and Schreibman and Siemens (2008) mentioned that reading pattern and eye movement also influence user preferences towards e-books. Woody and Baker (2010) stated that, although e-books tend to mimic printed books, but user will not read e-books the same way as they read printed book. The authors stated that readers often browse computer based text and read the text in "F" pattern to search for key terms rather than reading line-by-line (Nielsen, 2006). Schreibman and Siemens (2008) also suggested that e-book developers should take into consideration factors such as long line of text when designing an e-book.

E-books have generated interest in educational settings with publishers have increasingly been producing e-textbooks and other electronic course materials for various disciplines, such as chemistry, physics, computer science, history and mathematics (Crescenzi & Innocenti, 2003; Dyllick, 1997; Simon, 2001; Wilson, Landoni & Gibb, 2002). The current e-book used however have been criticized mainly because of the e-book adhere to the traditional book metaphor and do not take advantage of the interactive possibilities afforded by computer technology (Alessi & Trollip, 2001; Maří et al., 2002).

SUGGESTIONS FOR FUTURE RESEARCH

A preliminary review of the available literature reveals many recent hypes, activities and comments but still little in research, especially in the idea of e-book being used as a learning tool. Potential results from previous research (such as Stelle & Woodward, 2009; Letchumanan & Tarmizi, 2011) give clear directions for such future research. Furthermore, prior literature also suggests the use of college students as an ideal starting point for studies involving technology such as e-book (Wilson, Ladoni & Gibb, 2000; Wearden, 1998) for several observable reasons. This includes the amount of time they spent on textbooks, their need for rapid access to large amount of information, and their level of computer literacy.

In term of the overall reading process, academic reading is much more involved when compared to the leisurely readers. As an academic reader, students need to comprehend the reading content by connecting with schemata or mental models of prior knowledge previously stored in the semantic memory (Anderson & Pearson, 2002; Ausubel, 1968; Bartlett, 1932). Hence, Foster and Remy (2009) suggested that, "as e-books supplant paper ones, higher education leaders must take a lead in shaping the future of e-books, because the practice of reading is critical to our mission". Therefore, it is very important to differentiate between the reading needs of academic students versus casual readers because the cognitive load tends to be more concentrated for purposeful academic readers than for casual readers. A review of the literature indicated that few empirically based studies conducted determine the effects of students' cognitive load factors on learning. Further research also suggested to focus on the different characteristics embedded in e-book design to lessen the cognitive load and therefore increase the use of e-books in the teaching and learning process.

Publishers and educators have realized the potential of e-book in educational settings. Interactive abilities are to search and highlight text, make notations and to bookmark pages and dictionaries (Hodas et al., 2001; Rao, 2003), including video and interactive elements which will allow e-books to become active and stimulating learning tools. Consequently, individualized material or personalized interactive information content could

improve the role of e-book in the educational process and lead to improved more efficient learning (Dahn, 2001; Dahn & Schwabe, 2002). This integration has yet to be explored, (isolated study can be apply) in order to determine best practices.

Prior research mentioned about potential capabilities of the e-book such as remote access, easy usage within a virtual learning environment and allowing multiple readers anytime anywhere (Appleton, 2004; Long, 2003; Rao, 2003). Hence, these capabilities enable students to demonstrate their self-efficacy (Simon, 2002) when using the e-books for their learning. Literature reviews also indicate that reading preferences and the use of print or electronic resources varied among different disciplines (Liu, 2006; Slater, 2009). They also suggested that it might be beneficial to explore on how self-efficacy may influence students' learning while using e-books. Additionally, the factors influencing students' self-efficacy and also variation among different disciplines while using e-books would also be a vital area to explore.

It is clear that technology such as e-books plays an increasing role in education. However, the use of e-book is still low with the main reason identified as students preferences of using printed books compared to e-book (Anuradha & Usha, 2006; Ismail & Awang Ngah, 2005; Roesnita & Zainab, 2005; Noyes & Garland, 2006). Among the reasons mentioned were users' characteristics which might affect their perceptions and behaviors towards new technology (Szajna, 1996). Therefore, future studies might examine students' perceive value of the e-books and the use of e-books in teaching and learning process based on students' characteristics. This could provide a very rich lens to explore and understand the reasons of why students would or would not value the e-books as a form of learning tool as both perceived value and prior knowledge facilitates the learning process.

CONCLUSION

The challenges faced by current educators are to bridge the rapid technological world for students to live in and the classroom environment we expect them to learn in. Technology such as e-book can act as a catalyst that transforms the classroom into an interactive learning environment, having the power to make the instructor a better facilitator or coach, and bringing greater resources to bear in the classroom and adjusting the instruction to fit the person (Christen, 2009). However, e-book is still entangled with issues such as an acceptable definitions and functions; limited earlier research with contradictory results; in addition the majority of the research limit in its scope.

The arrival of e-books presents many opportunities for users and the teaching and learning process in a new, convenient and cost-effective way. Undoubtedly, e-book can offer learning materials that fits the need of computer-literate, technology-savvy, and net-generation students. This paper has identified several gaps in current literature and suggested direction for future research on e-books. The gaps shows that there is still a chance to improve the current uses of e-books while the direction will further encourage on-going enhancement on the use of e-books in the teaching and learning process especially as a learning tool.

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Blended Learning In A Blended Composition Class: A Case Study In French

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ABSTRACT

The following pages present a case study examining both faculty and student perspectives of a post-secondary French composition course that is blended in two respects. First, this application may be considered blended because technology is used to mediate portions of instruction. Second, the course is blended in that three formerly distinct classes and levels of instruction are fused into one faculty course assignment. With financial pressures limiting course offerings and forcing technology-mediated solutions at many public universities in the United States, the following study sought to document and describe the effect of a creative course redesign at one institution. Detailed course descriptions, student and faculty surveys, and third-party observations were employed in order gain insight into the impact of the redesign on all parties involved.

Keywords:

INTRODUCTION

HYBRID OR BLENDED LANGUAGE INSTRUCTION

The number of both hybrid and online courses offered in the United States at the post-secondary level has been increasing steadily over the last decade. Specifically, a series of studies by the Babson Survey Research Group has demonstrated a persistent rise in the number of online courses and the number of students enrolled in online and hybrid courses, culminating in a 2011 survey finding that 6.1 million U.S. students were taking a least one course through this medium. This number represents a 10% increase over the prior year such that an impressive “31% of all higher education students now take at least one course online” (Allen & Seaman, 2011, p. 4). A 2012 follow-up study involving both the Babson Group and *Inside Higher Ed* found that even while the number of on-line courses offered continues to rise, faculty attitudes toward on-line learning are “pessimistic, rather than optimistic” (Allen, Seaman, Lederman, & Jaschik, 2012, p. 2), with professors casting “a skeptical eye on the learning outcomes for online education” (2). The 2012 Babson study (Allen et al.) involved survey responses from 4,564 faculty members representing the full range of institutions of higher learning and included a complete range of faculty and disciplines. When focusing on faculty, the study found that even as of 2012 “professors, overall do not have a positive view of the learning outcomes for online education” (p. 7). Specifically, nearly two thirds of those surveyed (66%) said that they believe learning outcomes for an online course to be either inferior or somewhat inferior to those for a comparable face-to-face course. Even among faculty members who were currently teaching an online or blended course “considerable concern” (p. 8) remained, with 40%-50% of those respondents expressing apprehension over the quality of learning outcomes. When broken down by discipline, a positive attitude toward online learning was highest for faculty members in the applied sciences, and lowest for those in the humanities and the arts. When examined by gender, female faculty members professed being more pessimistic about online learning than did their male counterparts.

In spite of these insights, Allen et al. conclude that “we do not know exactly why faculty members feel as they do about these matters” (2012, p. 11) and suggest the need to study the context of such responses. While the faculty attitudes revealed in the Babson Group study crossed all academic disciplines, many in the foreign language profession appear to acknowledge the potentially facilitative role that technology plays in today’s language learning environments. Indeed, ACTFL’s 2013 theme, *New Spaces New Realities*, highlights changes in the language learning landscapes:

[N]ot only of schools and classrooms but also in the many virtual spaces that connect learners worldwide. These new spaces and realities provide myriad ways for students to access learning. From the new realities of technology such as Internet resources, mobile learning, online courses, webinars and video gaming to the many opportunities of authentic face-to-face encounters achieved by connecting to the community via service learning and internships, it is evident that language learning is flourishing. (Theisen, 2013, p. 7).

But even if we, as language educators, openly acknowledge the changing landscapes of language learning, relatively few studies have examined how both students and teachers feel about these changes. Instead, much of the research has focused on comparing student learning outcomes.

EARLIER HYBRID APPLICATIONS TO FOREIGN LANGUAGES

According to Karabulut, VeVelle, Li, and Surovov (2012), much of the research devoted to online and blended or hybrid applications to language learning has focused on the general effectiveness of these applications while essentially “ignoring the sociocultural aspects of the learning experience” (p. 344). Accordingly, relatively little research has examined or compared contradictions between teachers’ and students’ expectations or beliefs about using technology to mediate language learning. Indeed, comparisons of learning outcomes from two student groups, one engaged in online or hybrid instruction and the other in a face-to-face learning environment, have been the objective of many studies, most often focusing on beginning language learners.

Blake, Wilson, Cetto, and Pardo-Ballester (2008) compared the oral proficiency outcomes from three groups of beginning post-secondary Spanish students: distance, face-to-face, and hybrid. In this case, the traditional group met five days per week, the hybrid group met two days per week with seven additional hours of external technologically-mediated practice, and the distance group completed all lessons and practice via technology. After one semester of study, Blake et al. measured students’ oral skills using Pearson’s Versant for Spanish exam. They found no significant difference in the outcomes between any groups and concluded that “students are not being disadvantaged by taking Spanish in a non-traditional format” (p. 124).

Scida and Saury (2006) also compared outcomes between a hybrid and a face-to-face section of beginning Spanish. In this case, the traditional section met five days per week while the hybrid group met for three hours per week with two additional hours of external web-based practice. After administering an exit survey to students and comparing final course grades, the investigators found that the median grade for students in the hybrid section was higher than that of those in the traditional section and more students from the hybrid section reported being satisfied or very satisfied with the course (p. 523).

Gascoigne and Parnell (2013) looked at two beginning French courses: a hybrid section meeting 120 minutes per week and a face-to-face group meeting 240 minutes per week. Again, the hybrid course was supplemented

by 120 minutes of external online practice. In this case the authors compared scores from chapter exams, compositions, oral participation, the final exam, and overall course grades for each group. In each area there was no significant difference in scores between the two groups, and in the areas of oral participation, final exam, and final course grades, students from the hybrid group outperformed their face-to-face counterparts. Moreover, a comparison of course evaluations scores found that students in the hybrid section rated the course more favorably than did those in the traditional section.

A common finding of the above studies, and others, has been that student learning outcomes from hybrid environments within beginning language courses are not significantly different from those resulting from face-to-face instruction. While much of the research “has focused on how, and whether, technology can support and facilitate language learning, there are fewer studies that look into what language instructors do with technology in their classrooms” (Karabulut, VeVelle, Li, & Surovov, 2012, p. 343) or how teachers and students perceive this use. One notable exception is a detailed case study targeting students of French. In this case, Karabulut, VeVelle, Li, and Surovov (2012) sought to collect extensive data through semester-long student and instructor interviews. Targeting an intermediate level French composition and culture course, the authors provided detailed descriptions of the nature and context of the course: a web-blended format with material presented both online and in class including the use of visual media as content and clickers for interaction, and examined the perceptions of all parties involved.

Data was gathered by means of a three-part student survey focusing on student motivational intensity, student use of technology in English, and student use of technology for learning French. Additionally, there were four semi-structured interviews with each of the six students enrolled in the course, as well as four structured interviews with the instructor. Data analysis revealed a mismatch between the students’ and instructor’s rationales for using technology. Whereas the instructor viewed technology as a vehicle for learning, students saw it as a time-saving tool and appeared to ignore its role in the development of L2 proficiency. The mismatch also included the fact that the instructor was not aware of the types of technology used by students outside of class, nor was she aware of the problems faced by students when employing the technologies assigned by the instructor. The authors conclude that language instructors must gain an understanding of the types of technologies students are using in their language learning pursuits as well as their rationales for using them.

CASE STUDIES

“In the field of second language education, case studies of children and adults acquiring a second language in nonclassroom settings are prevalent in the literature, although case studies of adults learning a second language within a classroom setting are seldom found in the major journals” (Long, 1986, p. 226). While the observation above was made in the mid-1980s, even a cursory review of more recent publications suggests that it still holds true today. In spite of relative infrequent use, the comprehensive view provided by case studies makes them an ideal vehicle for examining how students function within, as well as how they perceive, the blended language learning environment. As we strive to understand the impact and implications of the ever-increasing number of online and blended language learning applications, the case study can give shape to a “multi-perspectival analysis” (Tellis, 1997, p. 3) that considers the voice of the instructor, the voice of the students, and the interaction between the two.

Because the case study “strives to understand situations in their uniqueness as part of a larger context and to provide in-depth understanding of a phenomenon using multiple sources of information” (Merriam, 2002, p. 104), it was considered to be the best tool for examining the hybrid application to language learning described in the pages that follow. Similar to Karabulut et al.’s 2012 case study, the present study employed a case study methodology because a “deep understanding of technology use by individuals, groups, and programs” (Grgurovic, 2011, p. 104) was desired. Indeed, we sought to describe the course as well as the perspectives of all stakeholders: the students at each level of instruction and the instructor. A single case, or holistic, design was selected because ultimately one course assignment represented the unit of analysis, and the case study approach can provide an “intensive description and analysis” of the class in question. This intensive description, often missing in quantitative studies, can be achieved in the case study design by employing multiple sources of evidence, such as interviews, direct observations, and surveys.

PRESENT STUDY

Even within the contemporary educational landscape characterized by increasingly varied learning environments and an ever-evolving stock of technological applications, the course described and examined in this article is unique in that it can be considered blended in two respects. First, it is blended in that some of the face-to-face instruction was replaced by student work done via distance and mediated by technology. Second, this course was blended in terms of the student make-up and the content. Specifically, three post-secondary French composition courses (one at the junior level, another at the senior level, and a third at the graduate level) were taught concurrently under one faculty course assignment. Due to the myriad revisions to the nature of an otherwise traditional course, a case study approach was deemed the best means of capturing the richness of the environment and considering the impact of the changes.

In addition to providing a description of the course in question: a post-secondary hybrid course on French grammar and composition combining three levels of language ability (third-year, fourth-year, and graduate), we sought to examine the perspectives of each of the stakeholders. Specifically, and similar to Karabulut et al. (2012), we examined student motivation to learn French, student technology use in English, student technology use in French, student perceptions of the hybrid nature of the course, as well as instructor and observer impressions.

The Research Questions

Within the confines of a unique multi-level hybrid course in French we sought to first describe in detail the course redesign, and next to examine:

- (1) How students at each level of instruction use technology in their L1 (English).
- (2) How students at each level of instruction use technology in the target L2 (French).
- (3) How the students at each level of instruction perceive the hybrid design of the course.
- (4) How the instructor perceived the hybrid redesign of the course.

The Course(s)

Due to a reduction in faculty lines (from four to three), French faculty at the University of Nebraska at Omaha were not able to offer the same number of course options per semester to students. In order to maintain the number of course offerings, a decision was made to use technology to fuel a redesign that ultimately fused two formerly distinct post-secondary courses, French 3040 (French Grammar and Composition) and French 4040 (French Composition and Stylistics), into a single faculty course assignment. To complicate matters further, French 4040 had historically been offered as a split undergraduate-graduate course (with a combined 4000 and 8000 course number) so that graduate students could take the course, complete additional work, and thus receive graduate credit. The course redesign described below therefore effectively fused three courses at three levels of instruction into a single faculty course assignment.

Faculty members at the University of Nebraska at Omaha decided to use technology, specifically a hybrid course redesign, in order to maintain a diverse offering of courses for a somewhat smaller pool of students. In this way we were able to satisfy our students' need for different courses without attracting criticism from administrators seeking ever-increasing returns on our limited faculty resources. The hybrid redesign described below allowed the instructor to capitalize on the common elements of the courses during face-to-face meetings, while also maintaining the individuality of course content at different levels via work done through distance.

The first course, French Grammar and Composition, is a 3000-level or junior-level French course. This course provides students with opportunities for practice in written composition along with a review of relevant grammar. This course has always met face to face for a total of 150 minutes per week. The second course in question, French Composition and Stylistics, is a 4000-level, or senior-level French course that focuses on advanced grammatical principles and provides more extensive practice in composition with attention to stylistics. This course had also traditionally met face to face for 150 minutes per week. The graduate iteration of the course is cross-listed with the 4000-level course and demands additional work and both lengthier and more frequent compositions on the part of the graduate student.

The Redesign

The redesign was primarily applied to the 4000/8000 level courses, as the 3000-level course continued to meet face to face twice per week for a total of 150 minutes. During the in-class meetings of the 3000-level course, the professor would review and expand upon a range of grammar topics initially presented in the first- and second-year courses. Students would then practice using the target structures in class as well as use the structures in short compositions. In the redesign, students in the 4000/8000-level course no longer met face to face twice per week as had taken place in years past. Now, the more advanced students were required to work through a posted review of target structures and complete practice activities on their own as mediated through a course management website (Blackboard). At eight predetermined points throughout the semester, however, the 4000-level students were required to attend the face-to-face meetings along with the 3000-level students. Dates of attendance were selected to correspond to the more difficult topics for which even the advanced students might have lingering questions. The 4000-level students also engaged in more extensive composition practice, which was completed out of class and submitted to the instructor via email. The graduate students did not participate in any grammar review activities and instead engaged in extensive compositions and rewrites—all completed and submitted via distance.

Materials

The research materials for this case study included four student survey instruments: a survey on motivational intensity in language learning (see Appendix A), a survey of technology use in English (see Appendix B), a survey on technology use in French (see Appendix C), and a survey seeking student input on the hybrid course redesign (see Appendix D). The first three instruments were adapted from Karabulut, VeVelle, Li, and Surovov (2012) and each contained eight Likert-scaled questions. The first instrument, the motivational intensity survey, while used in Karabulut et al., was originally adapted from Gardner (1985). The survey seeking student feedback on the hybrid nature of the course was an in-house instrument containing 13 questions to which a five-point Likert response was possible, as well as six open-ended questions: What is your impression of this hybrid language course so far? What do you like about taking this French course in a hybrid context? What do you dislike about taking this French course in a hybrid context? What would you change about it if you could? Have your feelings about French changed over the semester? Your feelings about the course? and, Are your learning goals being met?

Participants

Participants included the instructor, a native-speaker of French with 33 years teaching experience, the observer, a non-native speaker of French with 22 years of French teaching experience, and students in the three strands of the course. The 3000-level course contained eleven students, 10 of which were female. With the exception of one freshman, all students at the 3000-level were either juniors or seniors and ranged from 19-25 years in age. The 4000-level course was comprised of 10 students, eight females and two males. With the exception of one freshman, and one sophomore, all students were seniors, and all within the same age range as above. The graduate section contained three female students under the age of 30.

Procedures

In the twelfth week of a sixteen-week semester, a paper copy of the survey instruments was administered in class to students of both the 3000-level course and students of the 4000-level course. Students took approximately 20 minutes to complete the set of surveys. The surveys were not administered by the instructor. Students in the graduate section of the course completed an on-line version of the surveys. In addition to the surveys, the class was observed on three occasions throughout the semester. The observer, also a professor of French, and co-author of this manuscript, sat silently in the back of the room taking notes on student engagement, interaction with the instructor, and interaction between students.

SURVEY ANALYSIS

In terms of feedback on motivational intensity, students at all levels of instruction appeared to be motivated to learn French. This, however, is not terribly surprising given that the foreign language requirement at this institution concludes at the second-year of language study. Each of the eight motivational intensity questions (Appendix A) had three possible responses, one corresponding to high motivation, one corresponding to moderate motivation, and one indicating a lack of motivation. While motivation was high across all questions and all groups, those with variability across groups are discussed below. In terms of the first question, "I very actively think about what I have learned in my French class," 80% of the third-year students responded "very frequently," as did 70% of the fourth-year students, and 66% of the graduate students. In terms of question 5 "Considering how I study French, I can honestly say that I . . ." 90% of the third-year students responded "really

try to learn French,” as did 80% of the 4th-year students, and 100% of the graduate students. Question 8 asked students to describe their participation in class. In this case, 55% of the third-year students indicated that they volunteered answers as much as possible, where as 80% of the fourth-year students and 100% of the graduate students gave this response. It appears that students who had less face-to-face contact claimed to take advantage of this contact to a much greater degree.

The technology use in English survey produced little variation across levels of study. The overwhelming majority of students at all levels of instruction indicated that they “always” or “frequently” use technology in English in activities such as normal communication, work, entertainment, or when searching for information, accessing news, watching videos, reading blogs, listening to music, and shopping online. The only areas in which students admitted to rarely using technology were to post blogs or participate in chat rooms. Technology use in French, on the other hand, appeared to be much less frequent.

In this case, 36% of the third-year students used technology to gain access to French language learning opportunities several times per day, whereas 70% of the fourth-year students and 66% of the graduate students did. When looking up words in French for a paper 100% of the graduate and fourth-year students reported always or frequently using technology whereas 90% of the third-year students did. When searching the Web for information, all students at all levels reported doing so. An unexpected finding was that the less advanced students indicated greater technology use in French than those at the two higher levels for activities such as shopping, communication, reading blogs. For example, 73% of the third-year students used technology to communicate in French while only 40% of the fourth-year students and 33% (or one) of the graduate students did. Similarly, 55% of the third-year students used technology to access French videos, music, and texts, while only 10% of the fourth-year students and 33% (or one) of the graduate students did.

The hybrid course survey (see Appendix D) was administered to the 4000-level and 8000-level students only, as they were the only groups for whom instruction was differentiated. This survey contained 13 Likert-scaled questions, six open-ended questions, and one yes-no question. When asked if they believed the hybrid format presented material in a logical, sequential manner, 10% of the 4000-level students responded “always,” 50% said “frequently,” and 40% said “sometimes.” For the graduate students the responses were one each for always, frequently, and sometimes. When asked if online content was as demanding as content delivered in the face-to-face context, 20% of the undergraduates responded that they strongly agreed, 50% agreed, and 30% were indifferent. For the graduate students, one student strongly agreed and two agreed. When asked if the technology used for assignments was easy to understand all students at both levels either agreed or strongly agreed. When asked if the amount of communication was sufficient for learning 90% of the undergraduates agreed and 10% disagreed, whereas one of the graduates strongly agreed and two agreed. Similar results for both groups were produced when asked if technology-based communication is as effective as face-to-face communication for responding to questions. When asked if the hybrid format of the course met students’ need for flexible access to education, all students at both levels either agreed or strongly agreed. When asked if they believed the hybrid course design was just as effective as traditional methods, 10% of the undergraduates strongly agreed, 60% agreed, and 30% were indifferent. Among the graduates, one strongly agreed and two agreed. Question 8 asked if the students preferred hybrid courses to traditional face-to-face courses. In this case, 10% of the undergraduates strongly agreed, 20% agreed, 40% were indifferent, and 30% disagreed. The graduates responded with two agreeing and one indifferent. When asked if they preferred hybrid courses only for specific subjects and levels (rather than in general), 10% of the undergraduates strongly agreed, 60% agreed, and 30% were indifferent. For the graduates, one strongly agreed, one agreed, and one

was indifferent. When asked if students can learn the same amount in a hybrid course, 10% of the undergraduates strongly agreed, 60% agreed, and 30% were indifferent. Two of the graduates agreed and one was indifferent. When asked if the hybrid format allowed them to control the pace of their learning, 90% of the undergraduates agreed and 10% were indifferent. For the graduate students, two agreed and one was indifferent. When asked if they were able to motivate themselves to complete out-of-class assignments, 20% of the undergraduates strongly agreed, 60% agreed, and 20% were indifferent. For the graduate students one strongly agreed and two agreed. When asked if their learning goals were being met, all students at both levels responded affirmatively. When asked about how much contact time students of this hybrid course should have in the future, no one thought that it should meet significantly more often (such as once per week). 30% of the undergraduates and one of the graduates thought the class should meet somewhat more often, such as every other week. 70% of the undergraduates and two of the graduates thought there should be no change.

In terms of the open-ended questions, students at both levels shared mainly positive impressions of the course, such as enjoying the format, appreciating the ability to work at their own pace, enjoying the freed-up schedule and resulting flexibility, and appreciating the new and interesting format. When specifically pressed to name aspects that they disliked or that could be improved upon, one student admitted that he/she procrastinates and only recommends hybrid courses for those who are "highly motivated." One student thought that the class should meet more often, such as once per week, while another thought there should be no face-to-face meetings whatsoever. Another student shared that within the hybrid format, directions must be very direct and clear. Still another shared that he/she missed the interaction with and opinions of other students. When asked if their feelings about French and about the course have changed over the semester, students demonstrated the most enthusiasm in their responses, "I still love it and I love the course," "I am now more motivated to learn on my own," "I have good feelings," "I enjoy the language and the course," "steady and positive."

In addition to the student surveys a third-party (another professor of French) completed three class observations. The dates of the observations intentionally fell on days when the hybrid students were required to be present in class. The observer sat in the back of the room. She was concerned with observing the interaction between the face-to-face group and the hybrid students. Specific a priori questions were: Did the students interact well or keep to themselves? Were the hybrid students treated as intruders or did they appear to be welcomed? Did one group dominate the interaction?

The observer noted that while the room was set-up with tables, rather than individual desks, the hybrid students and the face-to-face students sat at separate tables. Indeed, it appeared that the face-to-face students had grown accustomed to a given seating arrangement and the incoming hybrid students, by default, filled the other available spaces. As this was a teacher-fronted class, in that the professor addressed the class as a whole and then solicited student responses to questions, there was little opportunity for student-to-student interaction. Due to this format, opportunities for student participation were evenly shared among both groups of students. Overall, the hybrid students appeared to be welcome in the class with no obvious animosity between the groups, even while sitting at separate tables.

DISCUSSION

One of the main objectives of this case study was to describe in detail a course redesign that sought to maximize faculty resources and increase course offerings by using a hybrid course redesign to effectively combine three levels of French instruction: a third-year grammar and writing, a fourth-year composition and stylistics, and a graduate composition course. In addition to describing the redesign, we sought to examine the sociocultural aspects of the redesign by surveying and observing student and teacher alike. In terms of the first research question, “How do students at each level of instruction use technology in their L1 (English)?” all students at all levels reported “always” or “frequently” using technology in English for activities such as normal communication, work, entertainment, or when searching for information, accessing news, watching videos, reading blogs, listening to music, and shopping online. The only areas in which students admitted to rarely using technology were to post blogs or participate in chat rooms. Given their levels of technology use in English, students involved in the hybrid versions of the course would be familiar with the basic technologies (email, the Blackboard course management site) used to partially mediate instruction.

In terms of the second question “How do students at each level of instruction use technology in the target L2 (French)?” we found relatively less technology use across levels when compared to their use in English. An unanticipated outcome was that the third-year students (the non-hybrid group) professed more technology use in French than either the fourth-year or the graduate students for personal pursuits such as shopping, communication, reading blogs, watching videos, films, reading texts, and listening to music. The more advanced students, however, professed a higher French technology usage for French study opportunities and for editing papers. Because the third-year students had regular face-to-face classroom contact, it is possible that they did not feel the need to seek out additional on-line instruction or pedagogical resources, and instead used their free time to seek out ludic French opportunities on line. The more advanced students, on the other hand, may have felt the need to supplement their limited face-to-face contact by additional on-line learning opportunities, perhaps at the expense of more leisurely online pursuits in French.

As for the third question, “How do students at each level of instruction perceive the hybrid redesign?” all students instructed through the hybrid redesign expressed positive reactions to the course. Although positive overall, a few students offered some suggestions for improvement or caveats. One student, while enjoying the course, intimated that the format may not work well for everyone. This student went on to say that in a hybrid context, students must be responsible and self-motivated. Two other students expressed the need for clear directions and deadlines, while another missed the interaction and opinions of other students. While all students believed that their learning objectives were being met, 30% said that they would nevertheless prefer a traditional face-to-face format.

How did the instructor perceive the hybrid redesign of the course? The instructor of the course completed the same hybrid course survey as the students. In this case, the instructor reported agreeing or strongly agreeing with all statements, with the exception of question #8 “I prefer hybrid courses to traditional face-to-face courses” to which she reported being indifferent. Based on responses to the Likert-type questions, the instructor reported having very positive impressions of the hybrid course, such as finding the on-line content as demanding as face-to-face content, the amount of communication to be sufficient, the technology to be easy to understand, and the hybrid design to be as effective as face-to-face formats. This positive position is similar to that of the majority of the students. When asked about how much contact time this hybrid course should have in the future, the instructor offered that there be no change, as did many of the students. While clearly

falling on the positive side of the spectrum, the instructor's impression of the hybrid nature of the course did not appear to differ dramatically from that of many of the students. It does, however, differ from the negative view of online education held by many faculty members—especially female faculty in the humanities—as found in the 2012 Babson Survey (Allen et al., 2012).

When asked give specific examples of what she liked about teaching this course in a hybrid context, the instructor's responses included more flexibility, increased curricular offerings, and flexibility for students' schedules. When asked about dislikes, responses included less face-to-face interaction with students and reduced speaking opportunities for students. The instructor also shared that organization, deadlines, and clarity of expectations are even more critical in the hybrid context. This insight echoes that of some of the students in this course as well as the finding from earlier investigations (Chenoweth, Ushida, & Murday, 2006; Scida & Saury, 2006). Indeed, hybrid and online students want and need "a much more specific work-plan with specific due dates, both to guide them in their study of the material and help them maintain a certain pace" (Chenoweth et al., 2006, p. 130).

CONCLUSION

While this study did not compare or measure student learning outcomes, as many hybrid-focused studies before it (Blake et al., 2008; Gascoigne & Parnell, 2013; Scida & Saury, 2002) it did apply a case study approach to a hybrid course redesign in order to better understand student and faculty perceptions of the undertaking. The redesign in question was multifaceted: it combined three levels of instruction into a single faculty course assignment while using technology to differentiate instruction for the three student populations. While yielding a rich set of data, one limitation of this study is that the amount and type of data produced is both difficult to summarize succinctly and impossible to extend to other populations.

This particular redesign enrolled a total of 24 students: 11 third-year, 10 fourth-year, and three graduate students. Due to financial limitations at our, and at many other institutions, it is becoming increasingly difficult to justify small course enrollments of 10-11 students. In addition to pressure from administrators, there may also be workload questions from colleagues in multi-language departments who are teaching similar courses to much larger numbers of students. For example, the combined enrollment in this case study barely equals the enrollment in a single section of a similar third- or fourth-year Spanish course at our institution. Barring any unforeseen increases in enrollment in French, creative solutions for maintaining course options must be considered. This case study presents one such option that uses hybrid instruction in order to achieve this goal and also provides insights into student and teacher expectations for, and impressions of, the experience.

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APPENDIX A

Survey of Motivational Intensity

Please respond to each of the following questions by circling the letter of the option that best describes your typical opinion or behavior.

1. I actively think about what I have learned in my French class:

- a) very frequently.
- b) hardly ever.
- c) once in a while.

2. If French were not taught in school, I would:

- a) pick up French in everyday situations (i.e., read French books and newspapers, try to speak it whenever possible).

b) not bother learning French at all.

c) try to obtain lessons in French somewhere else.

3. When I have a problem understanding something we are learning in French class, I:

a) immediately ask the teacher for help.

b) only seek help just before the exam.

c) just forget about it.

4. When it comes to French homework, I:

a) put some effort into it, but not as much as I could.

b) work very carefully, making sure I understand everything.

c) just skim over it.

5. Considering how I study French, I can honestly say that I:

a) do just enough work to get along.

b) will pass on the basis of sheer luck or intelligence because I do very little work.

c) really try to learn French.

6. If my teacher wanted someone to participate in an extra French activity, I would:

a) definitely not volunteer.

b) definitely volunteer.

c) only do it if the teacher asked me directly.

7. After I get my French assignment back, I:

a) always rewrite them, correcting my mistakes.

b) just throw them in my desk and forget them.

c) look them over, but don't bother correcting mistakes.

8. When I am in French class, I:

- a) volunteer answers as much as possible.
- b) answer only the easier questions.
- c) never say anything.

From Gardner, R. C. (1985). *Social psychology and second language learning: The role of attitudes and motivation*. London: Edward Arnold.

APPENDIX B

Technology Use in English

Please circle the position on the continuum that best describes your technology use in English.

1. I use the Internet and other computer technology to go about my normal communication, work, and entertainment.

Many times each day	A few times a day	About once a day	At least once a week	Seldom or never
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2. If I am writing a paper in English and need help finding or spelling a word, I use the language help in the word processing program or on the Internet.

Always	Frequently	Sometimes	Seldom	Never
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3. I search on the Web for information that I need when I am writing a paper for class or for my job.

Always	Frequently	Sometimes	Seldom	Never
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4. I shop for things like books, clothes, music, DVDs and other things on the Internet.

Normally	Frequently	Sometimes	Seldom	Never
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5. I use the Internet to get access to news and other information in English.

Normally	Frequently	Sometimes	Seldom	Never
----------	------------	-----------	--------	-------

6. I use email, instant messenger, or an Internet voice communication tool such as Skype to communicate with friends and relatives.

Normally	Frequently	Sometimes	Seldom	Never
----------	------------	-----------	--------	-------

7. I surf the Web for fun to find interesting blogs to read, images to look at, videos to watch and music to listen to.

For more than an hour every day	Almost everyday	About once a week	Less than once a week	Never
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8. I participate in chat rooms and contribute to discussion groups and Wikis on the Web to extend my activities beyond my everyday circle of friends.

For more than an hour every day	Almost everyday	About once a week	Less than once a week	Never
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9. I keep a blog to communicate in English with anyone who wants to know what I am doing or what I am writing about.

Frequently	Occasionally	Rarely	Never	I don't know what a blog is.
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From Karabulut et al. (2012). *CALICO Journal* 29(2), 341-366.

APPENDIX C

Technology Use in French

Please circle the position on the continuum that best describes your technology use in French.

1. I use the Internet and other computer technology to get access to French language learning opportunities by using CD-ROMs, word processing, or the Internet.

Many times each day	A few times a day	About once a day	At least once a week	Seldom or never
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2. If I am writing a paper in French and need help finding or spelling a word, I use the language help in the word processing program or on the Internet.

Always	Frequently	Sometimes	Seldom	Never
--------	------------	-----------	--------	-------

3. I search on the Web for information in French that I need when I am writing a paper for a French class.

Always	Frequently	Sometimes	Seldom	Never
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4. I shop on French Web sites for things like books, clothes, music, DVDs and other things on the Internet.

Normally	Frequently	Sometimes	Seldom	Never
----------	------------	-----------	--------	-------

5. I use the Internet to get access to news and other information in French.

Normally	Frequently	Sometimes	Seldom	Never
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6. I use email, instant messenger, or an Internet voice communication tool such as Skype to communicate with people in French.

Normally	Frequently	Sometimes	Seldom	Never
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7. I surf the Web for fun to find interesting things to look at in French—i.e., blogs to read, videos to watch and music to listen to.

For more than an hour every day	Almost everyday	About once a week	Less than once a week	Never
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8. I participate in chat rooms and contribute to discussion groups and Wikis in French on the Web to extend my opportunities for learning French.

For more than an hour every day	Almost everyday	About once a week	Less than once a week	Never
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9. I keep a blog to communicate in French with anyone who wants to know what I am doing or what I am writing about.

Frequently	Occasionally	Rarely	Never	I don't know what a blog is.
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From Karabulut et al. (2012). *CALICO Journal* 29(2), 341-366.

APPENDIX D

Hybrid Redesign Survey

Please respond to each of the following questions by circling the option that best describes your belief or behavior.

1. Hybrid learning allows for the presentation of course content in a logical, sequential manner such that it facilitates learning.

Always	Frequently	Sometimes	Seldom	Never
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2. Online content (including reading, research, review, learning new concepts, and assessment) is as demanding as content delivered in traditional face-to-face courses.

Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree
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3. Technology used for assignments is easy to use and understand.

Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree
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4. The amount of communication and interaction between students and faculty in the hybrid course was sufficient for effective learning.

Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree
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5. Technology-based communication is as effective as face-to-face communication for responding to questions.

Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree
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6. Hybrid courses meet the need for flexible access to educational opportunities.

Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree
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7. I believe using a hybrid course design is just as effective as traditional teaching methods.

Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree
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8. I prefer hybrid courses to traditional face-to-face courses.

Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree
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9. I prefer hybrid courses only for specific subjects and/or specific levels of instruction.

Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree
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10. Students can learn the same amount in a hybrid course as in a traditional course.

Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree
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From Sitter et al.

11. The hybrid format allowed me to control the overall pace of my learning.

Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree
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12. I was able to motivate myself to complete the out-of-class assignments.

Strongly Agree	Agree	Indifferent	Disagree	Strongly Disagree
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13. In the future, how often would you recommend that this class meet in person?

(Please circle one response below)

Significantly more often (e.g., every day)

More often

No change

Less often (e.g., 2-3 times per semester)

Not at all

Short Answer Questions

14. What is your impression of this hybrid language course experience so far?

15. What do you like about taking this French course in a hybrid context?

16. What do you dislike about taking this French course in a hybrid context?

17. What would you change if you could?

18. Have your feelings about French changed over the semester?

19. Have your feelings about the course changed over the semester?

20. Are your learning goals being met? YES / NO

Simultaneous Delivery Of Lectures To Students In A Lecture Room And An Online Meeting Room Using The Adobe Connect Teaching Facility

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ABSTRACT

INTRODUCTION: The purpose of this intervention was to investigate students' perspectives of the effectiveness of teaching when two distinct groups were combined during lectures. The two distinct groups consisted of a local (on-campus) cohort, and an online cohort interacting through the Adobe Connect live online teaching facility.

METHOD: The combining of lectures involved specific pieces of hardware for various reasons. A pilot study of three lectures was used to ascertain the feasibility of the investigation, after which the remainder of the module was delivered using this simultaneous method. Students were then asked to complete a questionnaire posed using Google Docs, based on their opinions of the entire module.

RESULTS: The results showed a spread of opinions among all of the students (n=41), however the overall trend appeared to be in favour of the method of delivery. There were additional comments made (n=3) that focussed on timeliness of answers during the lecture.

CONCLUSION: From this investigation, it can be suggested that the effectiveness of teaching when teaching local and online groups simultaneously is not adverse for the module in question. Further implementation of this combined delivery method should be investigated, as well as hardware and software adjustments

Keywords:

INTRODUCTION

Online teaching as a tool for tutoring groups that are geographically far-flung has been widely adopted in educational forums at the graduate and undergraduate levels (Wallace, 2010). Various programs and web-based systems are available, containing differing functionality and features, contributing to their adoption into diverse subjects and programmes. The web-based online teaching tool Adobe Acrobat Connect "has great functions and is appropriate for synchronous e-learning" and "make[s] the e-learning process easy and effective" (Garcia, Uria, Granda, Suarez, & Gonzalez, 2007, p.332). Adobe Connect is integrated within the Foundation Degree (FdSc) Dental Technology at Cardiff Metropolitan University to the extent that teaching is executed "live" through this VLE (Virtual Learning Environment) tool. Adobe Connect is used to deliver lectures, host breakout group discussions, display video and photo media, share files, allow chat and interaction between all users along with various other technical features. This learning tool is used in conjunction with two other packages (BlackBoard; an online learning system, and Mahara; an e-portfolio tool), to create an online ecosystem of platforms linked together through the structure and content set out by the designers to create a holistic Virtual Learning Environment. The students use each platform to perform specific tasks. This study,

while acknowledging the VLE as a whole, aims to focus on the amalgamation of live online lecturing through Adobe Connect with traditional face-to-face lectures delivered simultaneously. This application of Adobe Connect is somewhat unique and unexplored within the university and available literature, hence a compelling indication for this investigation.

Adobe Connect has been utilised as a lecture delivery tool in many educational institutes for the sole purpose of distance learning. However, it is of importance to this investigation “to acknowledge that distance education models are also increasingly being adopted for students studying on-campus.” (Smith, Lye, Greatrex, Taylor, & Stupans, 2013, p. 94). This aspect of blended learning for on-campus or local cohorts became a focal point for investigation after a review of financial outgoings for teaching staff within the Dental Technology unit. The delivery team oversees three dental technology programmes running concurrently through the academic year. Of these, two programmes are at the undergraduate level and the third is post-graduate. The two undergraduate programmes are run in differing modes; the full-time (BSc HONS) programme is run in a more traditional format, whereby students attend the campus to undertake practical demonstrations, theory lectures, tutorials and seminars, whereas the part-time (FdSc) is a distance e-learning programme where students meet once a week in online lecture rooms with few visits to campus each year. These two programmes have matched modules at levels 4 and 5, meaning there is some replication in the delivery of modules to the groups. In the interest of reducing staff teaching hours and rationalising staff costs, the aim was to implement and evaluate the simultaneous delivery of a module to local and online student cohorts using Adobe Connect.

Rationale: Efficiency of Teaching

One objective of the study was to reduce the need for doubling lecture delivery to two different student groups. Prior to this project, module tutors were required to tutor the same module twice; to the local student group and the online student group. The timetabling of the two courses was structured in a way that allotted lecture slots for matched modules were at separate times during the week to deliver to the two groups. The mapping of the timetable was not a complex problem; however a large drawback came from the fact that this dual mode was not financially streamlined. In addition, with certain modules an external tutor was recruited to deliver online lectures as full time tutors had a full teaching timetable, conversely increasing teaching costs further. Much research into online delivery of lectures has reported reduced costs in relation to reduced attendance time, as reported by Senthil, Kumar and Srivatsa (2012). These reduced costs derive from many factors, including reduced commuting and subsistence costs, lower paper printing and distribution expenditure and a reduction in tutor support hours. The last point, while included for a holistic view of cost benefits, is one of focal importance in the arena of learning and teaching. While a reduction in tutor support hours could be viewed in brief as detrimental to the traditional learning mode, it should be noted that an effective measure to increase efficiency of tutor contact is to increase the size of the target audience, spreading the tutor costs over a larger number of students (Senthil Kumar & Srivatsa, 2012).

Effectiveness of Teaching

While financial incentives are an important driver for this research, it is vital to note that the research was intended to assess any change in quality of teaching and learning foremost, with any financial benefits of secondary importance. The fore-running aim was to investigate any changes in the *effectiveness* of learning achieved by student groups when delivered live lectures simultaneously (online and locally). Many published

investigations report that e-learning is as “effective in terms of knowledge retention and embedding real learning as other forms of learning, primarily classroom based instruction” (Epic Learning Group, 2013). This is not to say that any design of classroom based instruction, when delivered online, will produce an equally effective tool for learning. E-learning tools should be carefully constructed and designed in order to support and enhance the student’s learning experience, as students “use learning strategies that are different from what they are used to in the traditional didactic, lecture-based classroom” (Huang & Zhou, 2005).

Teacher *immediacy* is defined as being “conceptualized as those nonverbal behaviours that reduce physical and/or psychological distance between teachers and students” (Andersen, 1979, p. 541). Further descriptions and definitions have been published by Mehrabian (1969), Gorham (1988), Sanders & Wiseman (1990), and Thweatt (1999). Teacher immediacy relates to traditional face-to-face teaching modes, where students are able to witness and interact with the tutor in a natural social setting, enhancing their learning experience through social connections. This concept is supported as having great impact on the effectiveness of learning, notably because there exists “an instructor-centred perspective of the teaching-learning relationship where the teacher plays a central and authoritative role in the classroom” (Rourke, Andersen, Garrison, & Archer, 1999, p.5). However, it has been noted that the application of the theory of teaching immediacy within online education needs reconsidering, as the interaction between students and tutors involves different aspects of social behaviours (Rourke et al. 1999). This sentiment is in agreement with Woods and Baker (2004, p. 1), who state that

“Failure to fully consider the relational dynamics in the online setting may produce greater feelings of isolation among distance learners, reduced levels of student satisfaction, poor academic performance, and increased attrition.”

Immediacy within an online environment is developed through three sources, described by LaRose and Whitten (2000) as being the teacher, the students, and the computer, contributing to “instructional immediacy”. A similar sentiment was also suggested by Moore (1989), who considered three sources of interaction to be learner-content interaction, learner-instructor interaction, and learner-learner interaction. His definitions of learner-content interaction broaden to identifying not just the content itself, but also the medium of content delivery (in the case of this investigation, Adobe Connect). These two studies support the view that the operational and management aspects of the delivery software(s) when tutoring online need to be seamless in appearance, however technical the procedures may be in reality. This potentially encourages confidence in the tutor and perhaps initiates teacher immediacy in turn.

When considering the aspects of immediacy in respect to simultaneous delivery between online and local students, a gap can be postulated between the two groups’ potential exposures due to their immediate environments. However, different surroundings don’t necessarily correlate to being negative, perhaps simply *different* in terms of achieving motivation through various immediacy sources. The interaction between the tutor and the student groups needs to be the central focus and main source of immediacy for both groups in order to create some semblance of homogeneity of effective learning environments.

Measuring Effectiveness of Teaching

The measure of effectiveness of teaching has been carried out in many various ways previously, although there seems to be a bias towards the value of student evaluations of teaching (SET). A study entitled "*Student ratings: The validity of use*" states that "student ratings are the single most valid source of data on teaching effectiveness" (McKeachie, 1997, p. 1219). Student evaluations of teaching are mentioned by the Quality Assurance Agency for Higher Education (QAA) in the following excerpt:

"Effective learning environments and teaching practices, including curriculum content, design and delivery, are informed by: current developments in learning and teaching practice; current research and scholarship; changes in professional, practice and work-based environments; feedback from students collectively and individually from module level and upwards; and the requirements of PSRBs." (The Quality Assurance Agency for Higher Education, 2012, p. 8)

Student Evaluations of Teaching (SET) are not only considered valid, but some advocate their use to be integral to Higher Education (HE) (Shevlin, Banyard, Davies, & Griffiths, 2000), perhaps because "Such information can be of use to academic departments in constructing normative data for the evaluation of teaching and may aid the individual instructor in improving his teaching effectiveness" (Costin, Greenough, & Menges, 1971, p. 530).

Regarding the literature available, and considering the structure of the VLE used in the programmes in question, SET was considered a valuable source of information to evaluate this intervention. The aim was to implement the simultaneous delivery of a module and evaluate the effectiveness of teaching, as considered by the students, when using this mode.

METHOD

Specifications and Hardware

The implementation of this teaching intervention involved a merger of two existing modes of delivery running in parallel to each other. Prior to carrying out this intervention, I had gained varying experience in both fields of teaching modes, and was somewhat fluent with the use of Adobe Connect from a technical viewpoint. However, as the combination of delivery modes is seemingly new, an initial three pilot sessions were planned within the overarching study to evaluate a module delivered entirely using simultaneous teaching.

The hardware requirements to be met for the tutor's PC (see Appendices 1-3), as well as the layouts of pods (window panes containing specific teaching tools, e.g, chat pod for text communication) within the Adobe Connect screen and the monitoring of chat amongst online students were noted as things to be aware of during delivery. The latter point was considered a potential on-going issue during lecture delivery, hence the plan to run three pilot sessions at the start of the module. The plan for the pilots was to have two tutors present in the lecture laboratory; one to deliver the content of the lecture and run the presentation software, and one to observe and monitor the distance delivery software (Adobe Connect). Three pilot sessions at the start of the module were thought to be sufficient in order to decide on the continuation of simultaneous delivery for the rest of the module.

Prior to the pilot sessions, it was vital to ensure the PC setup within the lecture lab met the specifications required to run Adobe Connect (see Appendix 1) and the presentation software (PowerPoint and Prezi). In addition, there were extra hardware considerations to be made, including connecting a second monitor to the PC to avoid “stacking” of open windows when running multiple programs. The two monitors were connected in “extended display” mode, meaning the PC uses them separately allowing different program windows to be opened on each screen. This technique stemmed from the issue of being occasionally blind to certain aspects, for example when displaying a PowerPoint slideshow in full screen with a single monitor, the user cannot pick up any incoming chat or other notifications from the online students as the Adobe Connect window becomes stacked “behind” the slideshow.

Another important consideration for simultaneous delivery different to standard adobe sessions was the use of a wide lens HD webcam (see Appendix 2). This allowed for a wider view of the presenter during delivery, meaning the tutor can wander to some extent. The freedom offered was thought to somewhat naturalise the environment for the tutor and the students. It was also thought to bring a real-lecture environment feel to the online group, when faced with a tutor standing at the front of a lecture lab and not sitting at a desk. Along the same theme, a Bluetooth wireless earpiece and microphone was included (see Appendix 3). The use of a single earpiece brought about the advantage of the tutor being able to clearly hear input from both student groups. (The regular setup for Adobe Connect lectures within the FdSc program utilises two-ear headsets for maximum immersion during lectures especially regarding student input.) For situations where sound may need to be played to the room, a standard PC speaker setup was connected. This was intended for conference call type meetings, when verbal communications from online users needed to be broadcast to the lecture lab group. In such an instance, the microphone input to Adobe Connect would be through the webcam microphone. Again, this supports the conference-call type meeting, where communication from anyone in the lecture lab can be provided to the online users.

VLE Organisation

The module-long management of the virtual meeting room did not differ in use between the FdSc programme and simultaneous delivery. Prior to the module starting, a meeting room was created to be accessed throughout in order to simplify the weekly logging in process. The URL (http://adobeconnect.uwic.ac.uk/dent_mat_a/) was posted as a direct link within the Dental Materials A module folder on Blackboard. A link entitled "Adobe Recordings" was posted in the left hand navigation pane, within which were contained sub folders distinct to each year group and pertinent modules. These folders were updated weekly with links to the latest recordings. This familiar theme between modules of placing similar metadata in common sub folders within the VLE was considered an advantage to the students' experience of the VLE by the delivery team. The recording of lectures was a part of the programme-team's procedure; after previous team meetings, it was agreed that recording all Adobe lectures should be the norm across modules.

The BSc module had not previously had any module delivery via Adobe Connect. In this respect, there was no existing "Adobe Recordings" link in the navigation pane of Blackboard. As no other modules were being trialled for simultaneous delivery, an "Adobe Recordings" sub-folder was created within the Applied Dental Materials 1 module folder. This was slightly different from the FdSc module design in order not to alter the BSc folder arrangement in any obvious way to students not enrolled on the module. Within the Recordings sub-folder, there were no differences to the FdSc layout. Each lecture recording was given a title that included the date of

delivery, as well as the title of the lecture. It was revealed in previous student feedback that using dates to mark lectures was useful for ease of identification, and this was therefore applied across the board.

It should be noted that the lecture recordings for simultaneous delivery were made within Adobe Connect. This indicates that viewing the recordings is only from the online delivery point-of-view, and not the lecture lab. This leads to a situation where the local students are able to view lectures from both aspects, whereas the online group are limited to viewing the lectures solely through Adobe. More research is suggested in order to ascertain whether this potentially creates differences in the learning experiences, and whether a live lecture theatre software recording could be incorporated (e.g. Panopto) to balance the bias.

Evaluation

The evaluation of this module delivery was carried out using a questionnaire posed to the students using blackboard. The questionnaire (Figure 1) was designed in order to ascertain students' opinions of their learning environment, experience and ease of use, specifically in relation to the simultaneous delivery aspect. The questionnaire used for the investigation was an edited version of an existing SET questionnaire (**SEE APPENDIX**), used to evaluate students' views on the technology utilised in online lectures. For this reason a pilot questionnaire was considered unnecessary.

The questionnaire was designed using Google Docs and embedded within the Announcements panel in Blackboard, to allow students to complete the questionnaire within the familiarity of the VLE. Reports of completed questionnaires were emailed immediately. The questions were a combination of rating scale responses, yes/no responses, multiple-choice and an additional comments section at the end.

There was no question to clarify whether the participant was from the local or the online cohort. This was done in order to maintain the premise of a combined cohort of peers among the students participating. As the questionnaires were completed anonymously, there was no way to prevent students from completing the questionnaire twice. However, assuming all students completed the questionnaire once, all members of both cohorts participated in the evaluation.

Figure 1

EVALUATION QUESTIONNAIRE

As part of the evaluation and development of the dual delivery of theory lectures for future implementation, we welcome your views on the delivery of the “Dental Materials 1/A module”. Please circle ONE RATING ONLY per question.

Would you describe the lecture environment as?

Intimidating Formal Informal Relaxed

Was the information presented to you in a clear and legible manner?

Perfectly Very clear Fine Not very clear Not at all

Were you questioned about content during the lecture?

All the time A lot Some A little Not at all

Were you offered an opportunity to ask questions?

No Yes

Did you feel involved in the lesson /did you feel part of the class?

Very much A lot Some A little Not at all

How appropriate/well utilised was the use of technology during the lesson?

Very Quite Okay Not very Not at all

This question is for the **Adobe Connect** users only: Where did you access the lesson?

Workplace (Lab) Internet Café/library (PC) Home Public area Wi/Fi

There is space provided below for you to make any other comments on this topic, and is an opportunity to offer positive and negative comments. (Feel free to continue onto another sheet/over the page if necessary)

RESULTS

This section will present the raw data from the survey results, and a more in-depth discussion will follow in the “Discussion” section. The questionnaire results were collated within a Google Docs spread sheet, and annotated into Table 1 below. A total of 41 (n=41) questionnaires were completed, with two of the closed-ended questions not being answered by all participants (see asterisks** in question column below). The “additional comments” section was filled-in by 5 participants. These raw answers are shown in Table 2.

Table 1

Q1: Would you describe the lecture environment as?	Intimidating	Formal	Informal	Relaxed	
		7	6	28	
Q2: Was the information presented to you in a clear and legible manner?	Perfectly	Very clear	Fine	Not very clear	Not at all
	5	21	13	2	
Q3: Were you questioned about content during the lecture? **	All the time	A lot	Some	A little	Not at all
	2	15	18	5	
Q4: Were you offered an opportunity to ask questions?	No	Yes			
		41			
Q5: Did you feel involved in the lesson /did you feel part of the class?	Very much	A lot	Some	A little	Not at all
	11	19	7	2	2
Q6: How appropriate/well utilised was the use of technology during the lesson?	Very	Quite	Okay	Not very	Not at all
	17	19	5		
Q7: This question is for the Adobe Connect users only: Where did you access the lesson? **	Workplace (Lab)	Internet Café/library (PC)	Home	Public area Wi/Fi	
	12		13		

For the following descriptions, all percentages have been rounded to the nearest unit. From Table 1, it can be seen that there was a spread of answers for the majority of questions. The answers for Q1 indicate most students felt relaxed (n=28) using this method of lecture delivery. This represents 68% of the mixed cohorts. The remaining answers were almost evenly split between **formal** and **informal** (n=7 and n=6 respectively). No students selected **intimidating** for this question.

For Q2, 51% of answers selected that the information presented was **very clear** (n=21), while 31% (n=13) selected **fine**. A small percentage of answers (n=2: 5%) selected **not very clear**. Anonymity prevents revealing which student group these answers came from.

Not all participants answered Q3- a total of 40 responses were recorded. The majority of answers provided were fairly evenly spread between **a lot**, being 37% (n=15) and **some**, being 44% (n=18) for how often the students felt they were questioned during lectures. A small 12% (n=5) selected **a little** for this question. No answers selected **not at all**.

All answers provided for Q4 (n=41; 100%) selected **yes** to being provided opportunities to ask questions during the lectures.

Perhaps interestingly, the answers for Q5 were spread across all options. This question asked whether students felt involved in the lessons- their feelings towards this aspect of the study are arguably a central factor to the intervention. The majority of answers (46%) selected **a lot** (n=19), followed in decreasing order by **very much** (n=11; 27%), **some** (n=7; 17%), **a little** and **not at all** (n=2; 5% for each).

The last question intended for both groups (Q6) showed the opinions of how well the technology was used were fairly equal between **very well** and **quite well** (n=17; 41% and n=19; 46% respectively). Just 5 selected **okay**, with no answers selecting the negative options.

The comments received for the final question are listed in Table 2, un-edited from source.

Table 2 : Un-edited additional comments

<p>I feel in lectures where students are actually present in the lecture room, a lot of the questions posed by those online get missed or aren't answered for a good while. Personally I find the lectures hard to follow if something is troubling me that has not yet been answered. The online lectures are a great idea, but I find it quite difficult to learn during these times as I always have a lot of questions to ask (as I don't always understand what I'm being taught). I'm also a visual learner, which is probably part of the problem because unless I see a process in action, I often don't understand it.</p>
<p>I didn't realise that we had to know so much more in comparison to the lectures, which came as a shock to me when I came to revise. Maybe a heads up on the amount of work required would have been nice. But apart from that the lectures were great.</p>
<p>I found this lecture alot harder to follow than the one we have face to face without a classroom of students. Even though they did try and include us in the lesson, I did feel at times that we were just spectators. There were several times where I did not understand something so I would type a question asking for futher explanation e.g 'I do not understand that last bullet point?' but this message may not be seen for 5 /10mins or so; by which point they have moved on from that particular slide and are talking about something else. So when the question is eventually seen, it then takes several more messages and time to establish what I was referring to and go back and find that slide....with our other subject the lecturer is positioned right infront of the camera and answers questions pretty much straight away which makes things alot clearer. I don't feel particularly engaged with the duel lesson and would much rather it was delivered directly at us instead of trying to combine the two. Being distant learners we get so little time with the teachers that I feel a little more direct time would give us a much stronger learning experience. Please note that my comments are by no means ment as a criticism of the lecturer but more in the way it is delivered to us.</p>

Feel quite isolated and not able to ask specific questions. The answers are generalised towards everyone rather than exact answers. It would be good to have more time online with tutors. All else is great!

need more explanation for each lecture as i feel

DISCUSSION

The results from Table 1 suggest that the overriding student opinions of simultaneous delivery are that it was not detrimental to the learning experience. The answers showed that the majority of students felt the simultaneous delivery was well managed and utilised in a way that involved and engaged both parties. This is supported by the majority of answers falling into the positive end of the ratings for Q2 and Q6. These questions relate to the tutor's use of the presenting and delivery tools (Prezi and Adobe Connect respectively) during lectures. This is an important point to consider: the use of the medium is just as important as the delivery of the content when teaching, as agreed by LaRose and Whitten (2000) and Moore (1989), suggesting that computer/content immediacy is one of the 3 sources that make up instructional immediacy. This highlights the importance of tutor fluency with the technology, and the need to create an appearance of a seamless conjunction between the various programmes being used. It also supports the fact that the lectures for the module in question were designed aptly for delivery through online lectures. When designing this intervention, the research showed that not all lectures are adequate for delivery through e-learning, as mentioned previously, and supported by Huang & Zhou (2005). The module in question was primarily fact-based, presenting the facts and figures relating to dental materials, their constituents, constituent ratios, and manipulation. It was felt that the didactic nature of existing teaching methods of this module correlated well to online delivery, and specifically simultaneous delivery. This seems to be supported in this investigation, indicating successful application of Adobe Connect within this module.

The answers provided for Q1 and Q5 suggest that the majority of students felt involved and relaxed within the lectures for the module. These questions relate to the student-teacher interaction and immediacy, and how much social connection is achieved during lectures. The role of the tutor is central in this respect, and creating a sense of interpersonal communication with the students. This sentiment is supported by Woods and Baker (2004), who state that "[Tutors] Asking questions, using humor, addressing individuals by name, initiating discussion, and sharing personal examples are verbal behaviors which produce immediacy and contribute to a sense of psychological closeness." These actions are natural social interactions, and can therefore be easily applied to both student groups in simultaneous delivery, via live video and audio streaming through Adobe Connect to the online students, and the proximity of the local students. In a sense, neither group loses out in this respect.

The answers for Q3 and Q4 probe students' thoughts regarding their interaction with the tutor about the information being conveyed. All students were encouraged to communicate and feedback during lectures, whether a question arose, or to answer questions posed, or for any other reason. The feedback of online students was mainly through text chat into the meeting room; however there were occasions when students felt the need to speak to the tutor. In these instances, audio and video were enabled for the student in question, to allow the group to see and hear the student's feedback. This supports the idea that the online students felt comfortable to communicate during the lectures and ties in with the results provided for Q1 and Q5. There was no noticeable difference in willingness to interact between the groups during lectures,

suggesting a level of equity between the groups. As this observation is supported by the answers in the questionnaire, it suggests an effective measure of engaging students through teacher immediacy for this module and delivery mode.

The questions for Q3 and Q4 enquire about questions during the lectures; Q4 is straightforward in illustrating that students felt they had opportunity to query and ask questions during lectures. This was intended during delivery: to afford all students the chance to ask questions at any point during the lecture. Online students have the option to type a question directly into the chat room at any point, or they can use the "Raise Hand" icon to indicate to the tutor they wish to speak. The local students were able to simply raise a hand, or speak up at any point they felt necessary to pose a question. The answers for Q3 are somewhat spread, with 15 students choosing that they were asked questions a lot, and 18 referring to being questioned some times during lectures. Additionally, 2 students thought they were questioned a lot, while 5 thought they were questioned a little. This range of answers indicates the tutor's attempts to engage the students by posing questions were viewed differently in terms of how often students felt they were asked a question. The process of asking questions at certain points during lectures was a continuation in delivery plans from before the module was amalgamated into simultaneous delivery. Questions were commonly enquiries based on current knowledge, i.e. word definitions, in an attempt to relate students to new knowledge.

The "additional comments" section drew the attention of five students, as seen in Table 2. These answers were open-ended; to draw out any specific details students may wish to expand upon. From the answers given, the theme seems to converge around timeliness of answering typed questions. This would suggest that these are views held by the online group of students. Some answers point to feeling "isolated" and suggestions of not feeling "particularly engaged", and being "just spectators". One other answer refers to the workload, while the final answer is incomplete. The theme of these answers seems to be something not to ignore, especially as they relate directly to the live management of the online system during the lectures. From memory, there are a small number of times that can be isolated where similar issues occurred. During the lectures, it is all questions were encouraged to be asked at any point, and the views presented here contradict that effort unfortunately. It has been noted that the chat text box in which any textual feedback appears can be made larger, to increase visibility during the lecture and to prevent any instances of missed feedback. This also suggests perhaps further investigation into hardware or software changes that could help prevent these occurrences.

The spread of answers throughout this investigation may be an indicator that the questions fail to engage students enough during lectures, and therefore do not have a positive influence on effectiveness of teaching in this module. Further research is perhaps necessary to explore this idea some more- both in relation to simultaneous delivery and traditional online/local delivery modes of this module.

The results in this study *could* be viewed as illustrating a certain level of equality among the two cohorts regardless of their location during the lectures. This assumed similarity in the geographically separate student groups involved potentially lends support to the intervention by virtue of the anonymity of questionnaires. Anonymity allows a rather blanket conclusion to be made of the two groups' views towards simultaneous delivery. However, anonymity also more definitely indicates a further study should be carried out for this particular module, in which student cohorts are identified and compared. This would present more accurate, usable results regarding simultaneous delivery of the module in question. Additionally, to further ascertain the

effectiveness of this delivery method, other modules within the same and other institutions should pilot and investigate similar delivery modes.

From my position during this intervention, a few notable observations were made of operational interest. The management of the various systems (adobe connect and presentation programs) became less of a concern after the pilot lectures, allowing more attention and focus on the delivery of the lectures. This was viewed as being akin to learning to drive a car, whereby drivers contend with learning the operation of the vehicle as well as the rules of the road in the beginning, and gradually the acts involved in the operation of the vehicle become subconsciously controlled. It is thought that this would be a similar experience to any other users of this mode of delivery; however it should be reiterated that I had gained previous experience with e-learning modules delivered using the same tools, as well as having an initial pilot study whereby an additional tutor was present in the room to assist in the control and management of Adobe Connect. It would be wise to suggest any adoption of this or a similar intervention utilise a pilot study in the same manner prior to starting.

CONCLUSION

This intervention has illustrated that there is a certain level of effectiveness felt among the student groups when lessons are delivered in a simultaneous mode. This illustrates that the module has been designed somewhat successfully to involve two geographically separate student groups with different study environments. This leads to indicating further use of this delivery method for the module in question; however some evolution in the delivery is expected to occur as a result of this investigation, e.g. probing students with questions during lectures perhaps needs further development into discussion groups. Additionally, further research is indicated to investigate areas exposed in this investigation.

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APPENDIX 1: PC REQUIREMENTS FOR USING ADOBE CONNECT**Microsoft® Windows® 7 Home Premium, Professional or Ultimate (32-bit edition, or 64-bit edition with 32-bit browser)**

- Microsoft Internet Explorer 8 or later
- Mozilla Firefox 3.x
- Adobe Flash Player 8 or later

Microsoft Windows Vista® Home Basic, Home Premium, Ultimate, Business, or Enterprise (32-bit edition, or 64-bit edition with 32-bit browser)

- Microsoft Internet Explorer 7 or later
- Mozilla Firefox 2.x, 3.x
- Adobe Flash Player 8 or later

Microsoft Windows XP Professional or Home Edition with Service Pack 2

- Microsoft Internet Explorer 6 or later
- Mozilla Firefox 2.x, 3.x
- Adobe Flash Player 8 or later

Windows hardware requirements

- Windows XP: 450MHz Intel® Pentium® II or faster processor or equivalent (128MB of RAM, 512MB recommended)
- Windows Vista: 1GHz Intel Pentium II or faster processor or equivalent (1GB of RAM)

Mac OS X v10.4, 10.5, 10.6 (Intel)

- Mozilla Firefox 2.x, 3.x
- Safari 2.x, 3.x, and 4.x
- Adobe Flash Player 8 or later

Mac OS X v10.4 (PowerPC®)

- Safari 2.x
- Mozilla Firefox 2.x, 3.x
- Adobe Flash Player 8 or later

Mac OS hardware requirements

- 500MHz PowerPC G3 or faster or 1.83GHz Intel Core™ Duo or faster processor
- 128MB of RAM (512MB recommended)

Linux®: Red Hat® Enterprise Linux (RHEL) 4.x, 5.x; Novell SUSE® 9.x or 10.x

- Mozilla Firefox 2.x, 3.x
- Adobe Flash Player 9 (Adobe Flash Player 10 available for Red Hat 5)

Solaris™

- Mozilla Firefox 2.x, 3.x
- Adobe Flash Player 9 or later

Additional requirements

- Bandwidth: 56Kbps

APPENDIX 2: LOGITECH B910 HD WEBCAM

System Requirements

- UVC mode (No software installation required):
 - Windows® XP, Windows Vista®, Windows® 7, or Windows® 8

Drivers provided for 32-bit and 64-bit versions of Windows XP, Windows Vista, Windows 7 or Windows 8

Microsoft® Office Communicator 2007 R2 or (higher) video conferencing requirements:

- OS: Windows XP (SP2 or higher), Windows Vista or Windows 7 (32-bit or 64-bit versions)

HD video (720 x 1280) at 30 fps

- CPU: Quad core 2.0 GHz or higher
- RAM: 2 GB or more
- Upstream bandwidth: 1.5 mbps

VGA video (640 x 480) at 30 fps

- CPU: Dual core 1.9 GHz or higher
- RAM: 1 GB or higher
- Upstream bandwidth: 600 kbps

For CIF (352 x 288) at 15 fps

- CPU: Single core 1.5 GHz or higher
- RAM: 512 MB or higher
- Upstream bandwidth: 250 kbps

- **Drivers/Software Downloads Required?**

Optional; driver for advanced settings.

- **Application Compatibility**

- Windows® XP, Windows Vista®, Windows® 7, Windows® 8
- Mac iOS 10.7 or higher

- **Certifications**

Optimized for Microsoft® Lync™ and Skype, Cisco® compatible, certified for Avaya and Avistar

Warranty Information

- 3-year limited hardware warranty

Package Contents

- B910 HD Webcam
 - External Privacy Shutter
 - Universal monitor clip
 - Installation CD
 - User documentation
- ** Software installation required for RightSound technology.*

Part Number

- PN 960-000684

Technical Specifications

- Carl Zeiss® glass lens
- Autofocus system
- 78-degree wide-angle field of view
- High-definition video in 720p widescreen mode with recommended system
- Color depth: 24-bit true color
- Frame rate: Up to 30 frames per second streaming video at 720p and VGA mode
- Full HD 1080p Video Recording
- Photo capture: 5 million pixels

- External Privacy Shutter
- USB cable (6 feet/1.8 meters)
- Built-in dual microphones
- Hi-Speed USB 2.0 certified
- Universal clip fits laptops, LCD or CRT monitors
- UVC compliant
- Works with most instant-messaging and video-conferencing applications
- Optimized for Microsoft® Lync™, Skype™, Cisco® compatible, certified for Avaya and Avistar
Logitech webcam drivers support HD audio, RightLight™ 2 technology

APPENDIX 3: JABRA GO 660 BLUETOOTH HEADSET

<ul style="list-style-type: none"> • General
<p>Packaged Quantity: 1</p> <p>Product Type Headset - Bluetooth 2.1 EDR</p>
<p>Width 0.7 in</p> <p>Depth 1.9 in</p>
<p>Height 1.1 in</p> <p>Weight 0.4 oz</p>
<p>Recommended Use: Cellular phone, Notebook</p>
<p>Additional Features Dual microphones, Call reject, Noise Blackout Extreme technology, On/off switch, Battery level indication, Built-in DSP, Multiuse, Volume control, Voice dialing, Answer/end button, Mute button, Last number re-dial, Data encryption</p>
<ul style="list-style-type: none"> • Headphones
<p>Headphones Form Factor: Ear-bud - Over-the-ear mount</p>
<p>Connectivity Technology: Wireless - Bluetooth 2.1 EDR</p>
<p>Bluetooth Profiles Advanced Audio Distribution Profile (A2DP), Hands Free Profile (HFP), Headset Profile (HSP)</p>
<p>Sound Output Mode: Mono</p>
<ul style="list-style-type: none"> • Microphone
<p>Type: Built-in</p>

- - Remote Control
- Type:** None
- Wireless Link
- Transmission Range:** 33 ft
- - Connections
- Connector Type:** Bluetooth
- - Miscellaneous
- Included Accessories:** Bluetooth adapter
- - Power
- Battery:** Headset battery - Rechargeable
- Run Time (Up To):** 5.5 hour(s)
- Standby Time:** 252 hour(s)

APPENDIX 4: EXISTING SET QUESTIONNAIRE, ADAPTED FOR THIS INVESTIGATION

LECTURE EVALUATION QUESTIONNAIRE SW Eng Blended learning project (ii)

Technology

As part of the evaluation and development of the lectures offered and for future lectures we would welcome your views on this one.

Please circle ONE RATING ONLY per question.

Total amount of lecture time spent on the subject areas?

Too much time 5 4 3 2 1 Too little time

Would you describe the classroom environment as:

Intimidating Formal Informal Relaxed

How appropriate was the use of technology during the lesson?

Very 5 4 3 2 1 Not at all

Did you contribute to any ‘polls’?

Lots more 5 4 3 2 1 None at all

Did you feel involved in the lesson /did you feel part of the class?

Very 5 4 3 2 1 Not at all

Where did you access the lesson?

Workplace-lab Workplace-office Home Office Other (please state)

Would you have preferred to have sat in on a “traditional” lecture at UWIC?

No / Yes

There is space provided below for you to make any other comments on this topic, and is an opportunity to offer positive and negative comments. (Feel free to continue onto another sheet if necessary)

Finally, thank you very much for completing this questionnaire

Exam Performance in a Hybrid Course: A Model for Assessing Online and In Class Exam Delivery Modes

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ABSTRACT

This study involved the impact of different assessment techniques in a higher education hybrid classroom. The study assessed the differences in exam results when student exams were proctored in-class versus online. In a freshmen level international business course twenty-four students participated in the study. The study was conducted with three conditions; students were administered four fifty-question multiple-choice exams with periodic retesting (N=24), a post-exam survey was distributed after exam one which provided feedback regarding student perceptions (N=24), and student feedback regarding the preference of the modes of delivery of exams was noted by the professor throughout the course (N=24). The proctored in-class retest scores for the students after taking the exam online indicated that they retained the material better than when the exam was first administered in a proctored in-class format. In general, exam scores were higher when the exam was administered online versus proctored in-class. The implications of these findings and the model developed by the authors to capture them are discussed herein.

Keywords: hybrid classroom, blended teaching, exam delivery method, online exam integrity, student perceptions, higher education, business

INTRODUCTION

Exam Performance in a Hybrid Course: Online versus Proctored In-Class Exams

As assessment of student performance has evolved, so has the research associated with it. A relevant and timely question linked to the issue of assessment is whether the mode of delivery of an exam impacts student performance. In other words, if an exam is administered online rather than proctored in-class, will student performance be affected?

This study involves a comparative analysis of online and proctored in-class assessments in a higher education hybrid international business freshmen level course. For the purposes of this study, a "hybrid course" is considered a course that employs both proctored in-class and online delivery methods (Babson Survey Research Group, Pearson, Sloan-C, 2012). The way in which a professor chooses to incorporate technology in a hybrid course may vary, but they will almost always use a Learning Management Systems and other web-based tools to attempt to add value to the learning experience. Johnson (*NMC Horizon Report, 2013*) states, "technology is going to continue to be a part of the classroom" which should encourage professors to find more ways to incorporate it. The increasing use of technology in the classroom means professors must determine how it can be used effectively for the delivery of course content. In addition, technology allows students to explore and learn in ways they would not otherwise be able to. For example, going on a field trip to an art museum in a foreign country may not be an option, but a "virtual" field trip to the museum by way of the internet may be feasible.

One of the possible changes caused by the increased use of technology in education is the mode of delivery of assessment activities. Changing from proctored in-class to online exams may allow for increased professor-student interaction during hybrid class time because the exam can now be administered outside of regular class time. This adds more time for student-student and student-professor interaction (or community building.) Responding to the diverse needs and demands of students (e.g., distance learning, reduced travel time and cost, necessity for more flexibility in schedules, etc.), many higher education programs have added more online and hybrid courses. (Garrison & Kamuka, 2004). This provides greater opportunity for creating a collaborative atmosphere filled with engaged discussion in the classroom.

In this study, the primary purpose for assessment activities is to measure the amount of material a student has retained and can recall. The professor administered both online and proctored in-class assessments to determine whether the mode of delivery for exams played a part in learning retention and recall. This study took place at a two-year state school of higher education and involved a total of twenty-four students in two freshmen level international business classes using the same teaching methods (same course).

Literature Review

The transition in the delivery of courses from traditional proctored in-class to online and hybrid in higher education is driving the need for increased research of teaching and assessment techniques. Today, three in ten college students report taking at least one online course, that is up from one in ten in 2003 (Stengel, 2012). The colleges of today need to be prepared to manage the increase in demand for online content. "Existing literature suggests the need to search for pedagogical approaches to online education that improve the quality of student learning, stimulate faculty intellectual growth, and enhance overall academic productivity" (Bishop, 2003). Effective assessment is a critical component of quality learning and academic productivity.

One way colleges are addressing the increased demand for online content delivery is by offering hybrid courses. A hybrid or blended course is a course where a "substantial proportion of the content (30-79%) is delivered online, typically uses online discussions, and typically has a reduced number of proctored in-class meetings" (Allen & Seaman, 2011). The offering of hybrid courses reduces the amount of proctored in-class class time and challenges students to work with the material outside of the traditional classroom. The hybrid format allows the administration of exams to be moved to an online format (from proctored in-class) if the professor chooses. In addition, with appropriate controls in place, it maintains the summative assessment environment as a final display of student learning (Morgan & O'Reilly, 1999). The decision to administer exams online (verses proctored in-class) in a hybrid class allows the opportunity for greater student-professor interaction during the proctored in-class time. However, students may not be as familiar with study habits for preparation of an online test as they are for a traditional in-class test (Hawk, 2007).

The hybrid environment challenges students to take greater ownership of their learning because they often must login and work with the material on their own schedule. In this environment, students may be given control over the timing and environment of their exam by designing the class to include online assessments. This can decrease stress and aid students in more efficiently completing their exam tasks. It may allow students to optimize their sleep-wake cycle "resulting in better exam performance" (Hartley & Nichols, 2008). In addition, the professor-student interaction can increase in the classroom because students should be better prepared after completing the deep thinking activities during the online portion of the hybrid course (Kahneman, 2011). It becomes critical to employ the appropriate tool for the task when asking students to work on their own to learn the material (Graham, 2005) (Kenney, 2012).

Kirtman (2009) found that "change does not... necessarily mean a reduction in learning." Learning is important to the student when they are invested in it and feel that they have the time to do it (Prince & Felder, 2006).

When a professor administers an exam online, his/her students can take it when it is most convenient for them to do so (within the window of the exam time). "Different people function more efficiently at different times of day, and this can affect their performance on any task." (Smith et al., 2002). In terms of teaching and learning, this means that some professors, and some students, will function better at different times of day. It also means some students will be more successful on exams at different times of day (Hartley, 2008).

Hollister and Berenson (2009) found there were no differences in course or exam performance when comparing a proctored versus unproctored online exam environment using activity-based exams. However, it should be noted the Hollister and Berenson study did not use multiple-choice exams, as was done in this study.

Though test environment has received significant attention from researchers, no instances of previous work were found where the mode of exam delivery (online vs. proctored in-class), test/retest, and hybrid classroom criteria were combined. These topics are the focus of this study.

Method

The population under study consisted of undergraduate students enrolled in two fifteen-week hybrid freshmen level international business courses at a two-year college. The research team consisted of a classroom professor teaching the two international business courses in which the study was conducted and two collaborating members from a nearby four-year masters granting institution. The first was a faculty developer with knowledge and interest in the area of online testing. The second was an accounting professor who was interested in learning more about the integrity of online assessment.

The classroom professor taught two sections, back to back, of the same international business course. The earlier section will be referred to throughout this study as Class A and the later as Class B. The professor administered four exams throughout the semester. Each exam consisted of fifty multiple-choice questions; was of equal value in terms of volume, complexity and contribution to the overall grade of the class; and none were comprehensive in nature. The exams were administered in two different modes, online and proctored in-class, and at different times throughout the semester.

The exam dates (excluding retests) were provided to students on the syllabus at the beginning of the semester with an explanation that any of the exams could be administered online or proctored in-class. As they entered classroom on the day of the exam, students were notified whether they would be taking the exam proctored in-class (at that time) or online (they had until midnight that night to complete the exam online in the Learning Management System). As such, all students should have been prepared for the proctored in-class exam when they arrived to class on the pre-announced exam day. This design was employed as an attempt to overcome the reduced performance of online exams associated with overconfidence and associated limited preparation. In other words, if students know an exam will be online there may be a tendency not to prepare as well for the exam because they know they will have access to outside resources while taking the exam. By not knowing which format would be employed and what time of day it would be administered (either in-class at the time of the class or after class until midnight on the day of the exam), the students prepared as if it was an in-class exam. This preparation is likely to have been more rigorous than if they knew the exam was going to be online.

In part, this study is a response to the call for more research by the Hollister and Berenson (2009) study, the difference being multiple-choice questions were employed herein while Hollister and Berenson (2009) used activity-based assessment techniques. Xu and Jaggars (2013) found that if students knew in advance the kind of test they were going to take, the outcome was affected. Therefore, in this study students were not pre-notified of the exam format. However, it should be noted that because students did not know the format of the exam ahead of time they were likely prepared to take the in-class exam. If the exam was then announced

to be online they had extra time (until midnight that day) to study more (if desired) before completing the exam.

All online exams were administered with controls provided by the Learning Management System used for this course. These controls were put in place to maintain construct validity (Shuell, 1986). More specifically, construct validity was maintained by using the same test questions and answer choices, then scrambling the order of both in the different testing environments. This was done to help ensure exams would be equally rigorous during any future retesting of the material. However, because the same exam questions and answers were used for initial exams and retests, there was the risk that “question memorization” (Squire, 1992) and/or “priming” might affect the outcomes of the study. Priming refers to the phenomenon that once an object has been perceived or processed, it can be more easily perceived or processed the next time it is encountered (Baddeley, 2004).

The Learning Management System was set to limit the time a student could spend on an online exam to sixty minutes and to randomize the questions and answers for each student taking the exam. All proctored in-class exams were administered with the same controls for time (sixty minutes) and the same questions and answers as the online exam, but the questions were not randomized for each student taking the exam. During the online exam, students viewed the entire exam at once allowing for backtracking to emulate the paper and pencil testing environment. However, due to the scrambling feature of the Learning Management System for online exams, questions and answers for proctored in-class exams were delivered in a different order than for online exams. Samavati et al (2012) recommends reducing the time allowed for online exams to 65-75% of the time allowed for proctored in-class exams to account for the fact that students have access to outside resources while taking online exams. This was not done in this study. Hillier and Fluck (2013) note there is apprehension on the part of academics and management adopting new fully electronic processes for high stakes exams instead of the familiar paper based processes. This is a barrier that needs to be addressed with reliable digital systems and procedures to make a smooth transition from pen to keyboard. During the time a professor chooses to convert an exam the support of the teaching and learning center and experienced colleagues are imperative because of the uncertainty and learning curve with new technology the professor is experiencing.

To minimize the impact of question memorization and/or priming, all retests were administered one week after the initial exams. Test-retest reliability is a measure of the consistency of a psychological test or assessment (Shuell, 1992). This is used to determine the consistency of a test across time. Retest method, where a test is given to the same individuals after a certain amount of time has passed, is one of the easiest ways to ascertain the reliability of measurements. Normally the correlation of measurements across time will not be perfect because of the different experiences and attitudes that respondents have encountered from the time of the first test (Key, 1997). In this study, this means students’ experiences throughout the week may have affected their performance on the retest.

The hybrid course under study was designed so 60% of the final grade was equal to the average of the four exams (15% each). The students could not do harm to their grade during retesting, but there was an incentive to try to perform well on a retest because the higher of the two scores (the initial take or the retest) was averaged into their final grade. The remaining 40% of the course grade consisted of a series of case study activities that was supplemental to these assessment activities.

The exam delivery mode for Class A was online then a proctored in-class retest for exam one, online (no retest) for exam two, proctored in-class then a proctored in-class retest for exam three, and online (no retest) for exam four. Exam delivery mode for Class B was proctored in-class then a proctored in-class retest for exam one, online (no retest) for exam two, proctored in-class then a proctored in-class retest for exam three, and online (no retest) for exam four (see Table 1: Exam Results).

Following the exam one proctored in-class retest, all students were asked to complete a short survey relating to the different exam delivery modes. The survey consisted of eight demographic and open-ended questions. Students completed the survey in class while they were waiting to receive their retest score on exam one from the professor. The purpose of the survey was to collect feedback on the mode of delivery and expected results from the students in the class.

Findings

Below is a table outlining the average exam scores achieved by students in the two international business classes under study. The delivery mode of the exam is listed where OL=online and IC=proctored in-class. If an exam was retested, there are two exam scores in the box and the delivery mode of both exams is also reported in the same box. For example, Class A exam one was originally administered as an online exam, but was retested unannounced in-class a week later. Essentially, there were a total of four unannounced retests

Table 1: Exam Results

	Class A (n = 12)	Class B (n = 12)
Exam one	OL 81.38% / IC 63.8%	IC 74% / IC 59.5%
Exam two	OL 80%	OL 71.6%
Exam three	IC 58.4% / IC 58%	IC 55.4% / IC 61%
Exam four	OL 78.4%	OL 73.6%

As indicated in Table 1, exam one was initially administered in Class A online (81.38%) and proctored in-class as a retest (63.8%) exactly one week later. The students earned a class average of 17.58% points more on the initial online exam than they did on the proctored in-class retest. The same exam was administered to Class B proctored in-class both times (74%/59.5%) and the class average was 14.5% points more on the initial proctored in-class exam than on the proctored in-class retest. Exam two was administered in Class A (80%) and Class B (71.6%) online only (no retest). Exam three was administered in Class A (58.4%/58%) and Class B (55.4%/61%) proctored in-class for both the initial and retest exams. Exam four was administered to Class A (78.4%) and Class B (73.6%) online only (no retest). Both classes earned higher average scores on all online exams when compared to the respective proctored in-class equivalent exams. The exam scores are consistent with other assignments in the course where Class A consistently outperformed Class B.

A lower score on the proctored in-class retest for Class A on exam one (initial online/retest proctored in-class) may have occurred because students had access to additional resources when taking the exam online. A lower score on the proctored in-class retest for Class B on exam one (initial proctored in-class/retest proctored in-class) might be explained by the fact that retention dissolves quickly when students move away from the testing date (Johnson & Mayer, 2009). Class A outperformed Class B on both the initial exam (online for Class A and proctored in-class for Class B) and the proctored in-class retest (proctored in-class for both Class A and Class B.) This may indicate that the online delivery of the exam in some way helped the Class A students better learn and recall the material.

Survey Results

After administering the retest on exam one, students were given a short survey to complete. A majority of students who completed the survey (n = 24) shared positive remarks about online testing (see Appendix A for the survey). There was very little variation between the responses in Class A when compared to Class B. For example, when asked to finish the following sentence, "The difference between the grades is most likely because...", students responded with answers demonstrating their awareness of the possibility of greater learning taking place during online testing as follows:

- A comfortable environment helps students with test anxiety do better on tests and retain more information.
- Investigation of the material while taking the test increases the learning of the material.
- Students like the independence of online test taking.
- Parallels real-life experience in the field of training
- Less stressful
- Prefer the ability to research the material that they are not familiar with
- Learn more in-depth as they read the material they did not know on the test

Students were also asked on the survey if they felt the grades earned online were a true indicator of student understanding of the material. They answered as follows:

- You need to understand the material to work online efficiently.
- It is up to the student to take responsibility to study without being in class.
- You must review more because there is less teacher interaction.
- I wouldn't have gotten an 84 on the second test/retest if I hadn't done any studying for the previous test. I remembered most of the material.
- You are on your own most of the time and it is up to you to learn it.

Two positive aspects of online testing were revealed through the student survey. First, online testing is often less stressful for students and, second, the ability to research the questions within specified time constraints mimics the real world business environment. These results were consistent with those reported in a study by Greenberg, et al. (2008).

Discussion

In this study, the average grades for online exams were higher in every case. The difference in exam scores between online and proctored in-class exams could be explained by different preparation techniques that students use for online versus proctored in-class exams (Hawk, 2007). Hawk found that students are more familiar with proctored in-class exams and know how to study and prepare for them. However, in another

study access to outside resources compensated for the unfamiliar format of online exams (Miller, Rainer & Corley, 2003).

Another possible explanation for better test results in the online environment could be time of day (Hartley & Nichols, 2008). Students were required to take online exams after class on exam day but before midnight. They were informed of which it would be only when they entered the classroom on the day of the exam. If the exam was to be online, they could choose the time that best fit their schedule and moderated their stressors. If this was a factor in the difference in performance in this study, it implies that convenience should be built into the structure of a hybrid class. With flexibility of time the researchers did look at submission times for online exams and found submission times were not close to one another leading to the conclusion that students in the classes did not work together while actually completing the exam.

In this study the in class retest grades were essentially the same regardless of whether students took the initial exam in class or online. This is true for exam one and exam three. These results are consistent with those found in the 2008 study by Greenberg, et al. where they stated:

Our quantitative analysis resulted in no significant differences between the mean scores of the content items on the comprehensive final that were initially assessed with a proctored in-class exam and those initially assessed with an online exam. This was an important finding because it suggested that traditionally administered exams did not necessarily result in better performance on a traditionally administered comprehensive final-and the same degree of usefulness in terms of performance on final exams for online exams.

Numerous studies have proposed that student performance on online and proctored in-class assessments is statistically the same (Hollister & Barenson, 2009), (Larson & Chung-Hsien, 2009), (Stowell & Bennett, 2010), (Mentzer, et al., 2007). Larson and Sung (2009) employed controls for proctoring in the online section of the course. The study required students to find a proctor at a university or college, library, or military installation and the proctor was required to check photo identification. Hollister and Berenson (2009) found there were no differences in course or exam performance when comparing a proctored verses unproctored online exam environment using activity-based exams. However, as mentioned earlier, the Hollister and Berenson study did not use multiple-choice exams, as was the case in this study.

Comments from the survey administered in this study indicated that a comfortable environment helps students perform better on exams and helps them to better retain the information being tested on. This may be because the students of today are often more comfortable with technology than they are with pencil and paper. "Research on testing via computer goes back several decades and suggests that for multiple-choice tests, administration via computer yields about the same results as via paper and pencil." (Bunderson, 1989). "However, more recent research shows that for young people who have gone to school with computers, national and state tests administered via paper and pencil can yield severe underestimates of students' skills as compared with the same tests administered via computer." (Russell, 1999). Test anxiety during an online assessment is shown to be lower than that felt by students when taking pencil and paper assessments (Stowell & Bennett, 2010).

Perhaps the most significant contribution of this study is the design of the retest. In the study, students entered the classroom on exam day without knowing whether they would be taking the exam proctored in-class at that time or online later in the day. This meant they needed to prepare as if it was going to be a proctored in-class exam. If it turned into an online exam (later that day) they had the benefit of both proctored in-class exam preparation and the use of outside resources while taking the online exam. This may be the best structure for a hybrid class assessment. In other words, if a hybrid class is designed so students are unaware of whether the exam will be proctored in-class or online, they will have to prepare for a proctored in-class exam. If the exam becomes an online exam (later that day,) performance will likely be greater than if it

was either an expected online or expected proctored in-class exam because students will have the benefit of the more rigorous exam preparation (expected proctored in-class exam) and the use of outside resources (online assessment resources such as textbook, notes, Internet, etc.)

Limitations and Recommendations for Future Research

This study was limited by the small sample size ($n=24$) and because it was conducted at a single institution and in a single course. A recommendation for future research efforts in this area would be to administer to a larger group across institutions and departments or replicate the study in multiple courses. The limitation of a small sample size may also have affected the survey results if the students felt identifiable. As such, future research in this area using student perception surveys would benefit from the use of online anonymous surveying.

The possibility of students studying for the second retest is also a limitation and may have affected the exam two proctored in-class retest score. In other words, the element of surprise may have been lessened after the retest process had been used earlier in the course. To control for this factor, exams should be proctored online and retested multiple times if possible. This should be employed in both classes as Class B did not have the online exam followed by an in-class retest for this study.

It is also important for future researchers in this area to maintain construct validity if they decide to change exam questions and answers to further eliminate the potential for question memory. Retesting on every exam, though possible, is not recommended because students would expect the opportunity to improve their grade and would likely prepare for the retest. However, this would occur only if students were not pleased with their initial exam score. This may skew the retest results. It is possible this was an issue on the retest of exam three in this study.

A change in exam format may also improve the validity of the results. For example, rather than utilizing all multiple-choice questions, future studies may choose to administer short-answer or essay questions for initial or retests. Future studies may also consider the use of a secured online testing environment such as Lockdown Browser or live proctoring to minimize the use of outside materials.

Conclusion

A 2011 study by Allen concluded the level of student satisfaction is approximately the same for both online and face-to-face courses. Students participating in this study reported that they were satisfied with the online testing environment and that it decreased test anxiety. Overall the professor and students in this study had positive experiences with online testing. This supports the hypothesis that mode of delivery of exams does affect overall performance. Based on the qualitative and quantitative data collected in this study, the students earned a higher average grade and performed better when they were assessed using online exams. This was supported by all online exam scores when compared to their proctored in-class equivalents.

Online exams allow for greater flexibility in scheduling. In addition, students enjoy using modern technology and receiving immediate feedback of their test performance. These factors mean online exams are often less stressful for students. However, students are also more comfortable preparing for traditional in-class proctored exams (Hawk, 2007). This is likely because the majority the exams they face early in life are administered in this format. As such, we recommend designing hybrid courses with random testing modes, alternating between online and proctored in-class formats. This will allow students to prepare for exams in a manner that is most comfortable and familiar to them (in-class) and to “take” at least some portions of their exams in a manner that is less stressful to them (online.) This provides a “best of both worlds” assessment approach to a hybrid class. In addition, the randomization of mode of delivery may increase performance on all exams.

The primary purpose of this study was not to quantitatively prove or disprove whether in-class or online assessment is superior, rather it was to establish and apply a process/model for doing so. The researchers feel

this was accomplished and that this surprise retesting model has value. However, we acknowledge that further application of the model on a much larger scale and using proven quantitative methodology would be of great benefit to an academic community that is steadily and intentionally marching toward a world with much greater emphasis on hybrid and online teaching and learning. Assessment procedures in this new world must be validated and “best practice” models need to be developed. All of this must take place very quickly because the pace of change to online and hybrid classes is rapid. This study created a model to be employed on a larger scale across institutions to move forward this rapidly changing field.

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Appendix A:

Post-Exam Survey

- 1) My **ACTUAL** "online" exam grade was (please circle)
100-90, 89-80, 79-70, 69-60, 59-50, 49-40, 39-30, 29-20, 19-10 or 9-0
- 2) I **EXPECT** to earn a (please circle) *higher or lower* "in-class" exam grade.
- 3) The difference between the grades is most likely because...

PLEASE STOP HERE UNTIL YOU HAVE RECEIVED YOUR GRADED "IN CLASS" EXAM

- 4) My **ACTUAL** "in-class" exam grade is _____
- 5) This difference between the *expected* and *actual* "in-class" exam grade is most likely because...
- 6) This exam grade difference between the *online and actual in-class* is most likely because...
- 7) Do you expect the grade differences you have seen for yourself to be similar or different when compared to those of your classmates?
Circle: Similar Different
Please give at least three reasons why this may be.
 - 1)
 - 2)
 - 3)
 - 8) Do you feel grades earned in online/hybrid classes are a true indicator of a student understanding of the material? Please explain.

(Optional Question) Your emotions as you completed this survey can best be described as:

(Optional Question) In general, how do you feel about online/hybrid classes verses traditional classes?

THANK YOU FOR YOUR PARTICIPATION IN THIS VERY IMPORTANT SURVEY

The Use Of Podcasting Revision Lectures In Improving Learners' Academic Performance

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ABSTRACT

Research studies completed on podcasting technology to date concentrated on the acceptance of podcasting technology in the educational settings and the challenges that it poses for higher education institutions and instructors. Very little interest has been accorded to the effect that podcasting could have on the learners' academic performance. Resultantly, a quasi-experimental study was conducted. The study was completed over a period of 12 months, in which a stratified random sample of 150 learners was selected from a population group of 280 learners at the Tshwane University of Technology. The sample was divided into experimental and the control groups. The assessment marks for four tests of the two groups were compared to determine the effect of the intervention. The outcomes of the study showed a remarkable increase in the overall mean score of the experimental group in comparison to the mean score of the control group. The number of scores which are > 75% have increased significantly and pass rate has improved as compared to the control group scores. These are positive signals of enhanced academic performance. The study concluded that there is a strong correlation between the use of podcasting technology and the learners' academic performance.

Keywords: *Podcasting, Teaching, Learning, Academic Performance*

INTRODUCTION

INTRODUCTION AND BACKGROUND TO THE FIELD OF STUDY

The introduction of the internet in the early 1990s led to the establishment of new learning paradigms, notably e-learning and m-learning, in the academic sector. According to Jacob and Isaac (2008), *e-learning* is learning facilitated and supported through the use of information and communication technology, and *m-learning* is the intersection between mobile computing (i.e. the application of small, portable and wireless computing and communication devices) and learning. Podcasting technology is a type of mobile learning in which a mobile device like a cell phone is used to listen to an audio podcast or watch a video podcast. Evans (2008) describes podcasting as a blend of two words i.e. *iPod*, the popular digital music player from Apple, and broadcasting. According to Dale (2007), podcasting is an audio content delivery approach based on web syndication protocols such as an RSS feed and secondly, podcasting intends to distribute data to mobile devices such as iPods, MP3 players, PDAs and mobile phones. Mobile devices which may be used for m-learning include digital media players, notably, iPods and MP3 players; smartphones such as Blackberry and iPhones as well as Personal Digital Assistants (PDAs) like Palmtops and Pocket PCs.

Research studies on podcasting completed between 2005 and 2012 embarked on the acceptance of podcasting technology, and how it can be used in education, whilst other researchers focused on whether or not this technology would encourage learners to skip lectures. Chan and Lee (2005) explored the potential use of

podcasting to deliver mobile ubiquitous learning in higher education. Tekdal and Cebeci (2006) described the technical aspects on how lecture podcasts can be published online and distributed through RSS (Really Simple Syndicate) feeds. Dale (2007) proposed strategies for podcasting to support student learning. Lazzari (2008) studied the creative use of podcasting in higher education and its effect on the competitive agency.

Fernandez *et al.* (2009) augmented this growing literature through the study on podcasting as a technological tool to facilitate good practice in higher education. Maharaj (2010) probed into the impact of podcasting on learner-lecture attendance, and found that podcasting did not negatively affect lecture attendance. In fact, a podcast lecture helped provide the necessary support in enhancing learning and improving understanding of the subject content. Foko (2009) examined the use of mobile technologies in an attempt to enhance learning in the South African educational environment and address the challenges of increasing digital divide. His study revealed the ubiquitous presence of mobile phones with advanced features such as MP3 players, e-mail system, internet, etc. is not optimized to assist learners. Dupagne *et al.*, (2009) conducted a study in which the effectiveness of using video podcast as a revision tool was addressed. Their findings attested that learners who watched the video podcast did not obtain a higher pass rate than learners who did not watch the video podcast.

The current study focused on the effect of audio podcasting use on the learners' academic performance.

PROBLEM STATEMENT

There is an unclouded necessity for higher education institutions in South Africa to vary lecturing and learning mechanisms in the quest to provide for the learner's unique learning needs, in order to optimize lecturing and learning and improve academic accomplishment. It is decisive and necessary to provide constant and consistent learning support mechanisms whilst learners leave formal learning contexts e.g. lecture rooms and laboratories in order to enhance learning and allow constructive utilization of time. As Foko (2009) has noted, the ubiquitous presence of mobile phones in South African higher education institutions is not optimized to address the needs of the learners.

SCOPE OF THE STUDY

The present study primarily attempted to measure the effect of podcasting lectures on the learners' academic performance. Academic performance refers to improvement or decline of test grades. The study was conducted in a theory based subject using audio lecture podcasts. In a preliminary study, most of the learners indicated that they own and have more access to MP3 players than MP4s and MPEGs. The measurements used in the study are only applicable to the subjects of the same nature (theoretical) like business administration, computing fundamentals and information systems, and not practically oriented subjects like accountancy, mathematics and programming, which would preferably require video lecture podcasts (vodcasts). The study focus is directed at determining whether or not the introduction of podcasting technology in the subject had a positive or negative effect. The study did not look at any other factors which might possibly distinguish the experimental group from the control group performance.

OBJECTIVES OF THE STUDY

PRIMARY OBJECTIVE:

To determine the effect of podcasting audio revision lectures on the learners' academic performance.

SECONDARY OBJECTIVES:

- To assess the most recent body of knowledge regarding the use of podcasting in teaching and learning.
- To identify the most appropriate pedagogical approaches for podcasting revision lectures.
- To evaluate the increased lecturer-learner contact time provided by the use of podcasting technology.
- To make recommendations and identify future research opportunities.

METHODOLOGY

RESEARCH PARADIGM

The study aligned itself with the positivist research paradigm. The positivist paradigm underscores the objectivist approach to studying social phenomena giving importance to research methods focusing on quantitative analyses such as surveys and experiments. According to Dash (2005), positivist paradigm embraces the fact that true knowledge is based on experience of senses and can be obtained by observation and experiment. The aim of this study is to conduct a quasi-experimental study wherein answers or solutions to the problems that were identified through empirical observations were investigated. The empirical observations that were made attested that the current teaching/lecturing and learning practices at the local higher education institutions do not address the learners' diverse needs thereby impeding on the academic performance.

RESEARCH APPROACH

De Villiers (2005), remarked that a research approach is the primary model utilized to put the study in process. Quantitative research approach explains the phenomena by collecting numerical data that is analyzed using mathematically or statistically based methods. The current study utilized a quantitative approach to collect numeric data (learners' test scores) to examine the cause (lecture podcasts) and possible effect (academic performance) relationship.

RESEARCH METHOD

The study employed a quasi-experimental method. A sample of 150 learners was selected from the population group of 280 learners. Stratified random sampling method was used to divide learners into control group (n=75) and experimental group (n=75). The control group learners consisted of learners who have completed the subject in the first semester before the introduction of the podcasting technology in the subject whereas the experimental group consisted of the learners who did the subject in the second semester through the assistance of podcasting technology. Learners' marks for four assessments were collected and compared according to the following percentage classifications: 0% - 39% (below average), 40% - 74% (average) and 75% - 100% (above average or distinction).

RESEARCH PARTICIPANTS

Babbie (2004) stated that in any research study, there must be a main body “who” and/or object “what” that is being studied. Therefore, the unit of analysis in this study was “who”: the undergraduate learners enrolled for a management and entrepreneurship course in the faculty of management sciences at the Tshwane University of Technology and “what”: podcasting technology impact on academic performance.

RESEARCH MATERIALS

To produce a lecture podcast, the researcher used a sennheiser wireless presentation set, podcasting software (Camtasia) and a HP laptop running Windows XP OS to record the lectures. After recording and editing has been completed, the lectures were uploaded on the university’s Learning Management System (LMS) called MyTutor (Blackboard). MyTutor is a three tier LMS based on blackboard. The three tiers are content management (includes folders, files of any format), interactive options (includes assessments and assignments) and communication (includes email, forum, chat). The learners accessed the audio lectures on the university’s LMS and downloaded to their MP3 or MP4 players to listen to at any time convenient to them (pull technology).

DATA COLLECTION INSTRUMENT

Published literature on podcasting technology was used to guide the study. Experiment data (test scores) was collected from the mark sheets where the test marks are recorded.

RESEARCH PROCEDURE

Lectures were recorded before the face to face lecture took place. The duration of the lecture is 60 minutes. According to the principles of good lecture podcast design, the maximum size of the lecture podcast should be limited to 5 – 10 min which is the normal size of an audio file (song). To comply with this principle, the audio lectures were chunked in 10 minutes’ episodes. The podcast lectures were made available for downloading by the experimental group learners. An information session was conducted on the following aspects:

- The code of research ethics was explained to the learners.
- Informed consent form was explained.
- The researcher demonstrated how to access and download the lecture podcast.
- Demonstrated how to burn a lecture podcast to a CD.
- Demonstrate how to play a lecture podcast (playback and fast forward).

DISCUSSION OF TEST 2 RESULTS

The mean of the control group (38.6) and the experimental group (59.90) are significantly different ($p < 0.05$).

The control group mean (38.6) is the reflection of a large proportion of learners that failed test2 ($n=58$) as compared to a small number of learners that passed ($n=17$) and another small number ($n=8$) that obtained distinctions ($>75%$). The std. dev (21.08349) denotes that the spread of the learners' scores ($n=58$) in the control group is below the pass mark of 50%. However, there is a noticeable improvement in the control group test1 and test2 mean i.e. a 1% improvement from 37% to 38%. The reason for this mean improvement is largely dependent upon increased number of the distinctions (from 5 to 8 learners). Nonetheless, the number of the learners that failed is still alarming and increased from 53 to 58. The experimental group mean shows an improvement from 57.53333 in test1 to 59.90667 in test 2. A large proportion of learners ($n=53$) passed the test, a worrying number of learners ($n=21$) failed and only a small number of learners ($n=20$) obtained distinctions. The experimental group std. dev (22.90118) indicates that most of the learners ($n=33$) scored average marks in test2.

-> t test **test3**, by (id)

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
Control	75	42.88	2.274652	19.69906	38.34766	47.41234
Experime	75	72.33333	1.909609	16.5377	68.52835	76.13831
combined	150	57.60667	1.909423	23.38556	53.83362	61.37971
diff		-29.45333	2.969957		-35.32233	-23.58433
diff = mean(Control) - mean(Experime)					t = -9.9171	
Ho: diff = 0					degrees of freedom = 148	
Ha: diff < 0		Ha: diff != 0		Ha: diff > 0		
Pr(T < t) = 0.0000		Pr(T > t) = 0.0000		Pr(T > t) = 1.0000		

DISCUSSION OF TEST 3 RESULTS

The mean of the control group (42.88) and the experimental group (72.33) are significantly different ($p < 0.05$). The control group mean (42.88) shows an improvement in contrast to test1 and test 2 mean. The number of learners ($n=24$) that passed increased by 7 in contrast to test 2 and by 2 in contrast to test 1. However, the number of the learners ($n=51$) that failed is still alarming hence a std. dev. is 19.69906. The number of distinctions ($>75%$) declined by 2% in comparison with test 2. The experimental group mean (72.3333) has increased tremendously in contrast to test1 and test 2 mean. The number of learners ($n=72$) that passed is 72 out of which 32 are distinctions. The results of the experimental group test 3 are desirable because only 3 learners failed out of 75 learners. The std. dev. (16.5377) shows that the spread of the learners' scores in the experimental group ($n=32$) is much higher than the group mean (72.33333).

-> t test **test4**, by (id)

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
Control	75	41.6222	2.434512	21.08349	33.74913	43.45087
Experime	75	62.916679	2.644401	22.90118	54.63758	65.17575

combined	150	49.25333	1.992473	24.40271	45.31618	53.19049
-----+-----						
diff		-21.30667	3.594399		-28.40964	-14.20369
-----+-----						
diff = mean(Control) - mean(Experime)					t =	-5.9277
Ho: diff = 0					degrees of freedom =	148
	Ha: diff < 0		Ha: diff != 0		Ha: diff > 0	
	Pr(T < t) = 0.0000		Pr(T > t) = 0.0000		Pr(T > t) = 1.0000	

DISCUSSION OF TEST4 RESULTS

The mean of the control group (41.62) and the experimental group (62.91) are considerably different (p<0.05).

The control group mean (41.6222) is the reflection of a large proportion of learners that failed test 4 (n=56) as compared to a small number of learners that passed (n=19) and another small number (n=5) that obtained distinctions (>75%). The std. dev. (21.08349) symbolized that the spread of the learners’ scores (n=56) in the control group is below the pass mark of 50%. The experimental group mean shows a decline of 10% from 72.3333 in test 3 to 62.91669 in test 4. This is due to the fact that a large proportion of learners (n=62) passed the test at average scores ranging between 50% and 69%. A small number of the learners (n=13) failed and only a small number of learners (n=20) obtained distinctions. The experimental group std. dev. (22.90118) indicates that most of the learners (n=62) scored average marks in test 4.

FINDINGS

Primary objective

A two-sample t-test was performed using Stata V12 statistical software to compare the mean of the control group and the experimental group. The t-test was done on four assessments of each group. All the four tests indicated that there was a significant difference in the two groups’ mean. The pass rate and the number of test scores that are >75% have also improved as compared to the control group performance. Therefore the study has attested that there is a remarkable correlation relationship between the intervention that was made in the form of podcasting revision lectures and the learners’ academic performance.

SECONDARY OBJECTIVES

Objective 1: Research in podcasting revolved around the following headings, Podcasting in education, the impact of podcasting on learning, the impact of podcasting on lecture attendance and less attention was given on the impact of podcasting on academic performance. Recent research reports (Fernandes 2009; Lau 2010; Walls 2010; Lazzari 2009; Evans 2008 and Edrisingha 2010) acknowledged and corroborated empirically the use of podcasting in education and the positive effect that podcasting technology has on learning. The reluctance and in some instances the hesitancy to adopt podcasting technology by some academics and institutions lies in the fear that learners would skip face-to-face lectures. Recent reports (Zhu 2010; Bongey 2006; Lazzari 2008; Hew 2009; Hove 2008 and Maharaj 2010) indicated that podcasting did not lead to a decline in lecture attendance. Very few studies (Ousten 2011; Dupagne 2009; Morris 2010 and Bensalem 2011) explored the impact of podcasting on academic performance. These researchers reported conflicting findings on the effect of podcasting on academic performance. Notably, Bensalem (2011) & Dupagne (2009) reported “no difference” between learners who viewed or listened to podcasts and those who did not. Morris (2010); Ouston (2011)

and Bond (2008) reported positive results with regard to the use of lecture podcasts. This study affirms the findings of Ouston (2011) and Bond (2008) in that the findings of the study signified a strong correlation relationship between podcasting technology and the learners' academic performance.

Objective 2: Blended learning pedagogy is the most appropriate pedagogy to podcast revision lectures. This pedagogy encompasses face-to-face contact and web technology as complementary and supplemental to each other. It is a new development in technology based and/or supported learning. It can be defined as a way to design courses that blends different kinds of delivery and learning methods that can be enabled and/or supported by technology with traditional teaching methods (de Boer 2004). The blended learning approach is the favourite because it combines different teaching approaches and learning styles. It is a flexible approach in which every teacher and every learner can regulate his/her own way of teaching and learning. As witnessed in the current study, learners listened to a lecture podcast prior the face to face session and were also able to revisit the lecture podcasts after the face to face session and use the podcasts to prepare for the assessments as well.

Objective 3: Since the lectures were recorded prior to the presentation in the lecture room, learners were granted an opportunity to interact with a lecture before, during and after a lecture presentation. Learners were encouraged to listen to the lecture podcast before they attended a face to face lecture session. After a face to face lecture session had taken place, learners were advised to revisit the lecture podcast to foster understanding of the subject matter. A face to face lecture session was therefore only attended for questions (by learners) and answers (by the instructor). In consequence, the podcast technology has increased the lecturer-learner contact time in two ways i.e. mobile virtual classroom and traditional face to face lectures. This fact is evident in the positive change of performance in the four assessments that were used in the study.

Objective 4: The quasi-experimental study outcomes exhibited that there is a noteworthy correlation relationship between podcasting technology and academic performance. The findings of this study diverge from those of (Dupagne *et al.* 2009) in which the effectiveness of using video podcast as a revision tool was addressed. Their findings attested that learners who viewed the video podcast did not achieve higher pass rates than learners who did not view the video podcast. Although Dupagne *et al.* (2009) used a video podcast instead of audio podcast (which was used in the current study), their findings basically suggested that podcasting use yielded neither positive nor negative results. Contrary to Dupagne *et al.* (2009), the present study reported positive as well as minimally negative effects.

Based on the findings and conclusions of this study, the researcher recommends that podcasting should be incorporated into blended teaching and learning environments in the quest to provide constant learner support anytime, anywhere and increase lecturer-learner contact time and accommodate diverse learners with various learning needs, consequently improving the learners' academic performance (learning outcomes).

Justifiably, the researcher proposes that the following suggestions should be taken into account when institutions or instructors decide to introduce or use podcasting in their teaching and learning practices:

- Lecture Podcast should not be used to substitute a traditional face-to-face lecture but rather be used to supplement and complement it. This is exactly how lecture podcasts have been utilized in this study.
- Make lecture podcasts available to learners before the face-to-face lecture sessions take place. This practice would not cause learners to skip lectures. There is massive evidence in the literature to corroborate this fact. The rationale here is that when learners attend the face-to-face lecture session, they will already be informed about the new content and instead of being passive recipients of information and knowledge they would become actively involved in the learning event by questioning and looking for solutions to problems encountered while they were listening to a lecture podcast.
- Record lectures in a private and relaxed environment. This will allow the instructor sufficient time and space to record only the important parts of the lesson content and discard the unnecessary content. *If lectures were to be recorded during a face-to-face presentation, potentially there could have been disturbances which somehow could have tampered with the quality of the recording e.g. a learner asking an awkward question or a lecturer being irritated by the learner will affect the direction of a lesson and eventually the recording thereof.*
- When deciding on which podcasting software to use, check available file types. It is crucial that the lecture podcast is made available in the format that is compatible with the learners' mobile devices or PCs.
- Conduct a preliminary research into what technologies are available or accessible to learners. This exercise will help to ensure that audio or video production is made available in formats and file types compatible with the learners' mobile devices or desktops otherwise the whole podcasting project will result in a null effect. Podcasting is expected to provide constant learner support at anytime, anywhere.
- Indexing the episodes was one of the successful and interesting factors in this study. With Camtasia, it was possible to index each episode according to the slide title. This practice has helped the learners to listen to only what they deemed important instead of being obliged to listen to the whole lecture podcast. Rationally, this practice has also fulfilled one of the objectives of this study that was stated as follows: Cater for diverse learning needs. Below average learners would want to listen to the whole lecture podcast more than once, whilst average learners would prefer to listen to it only once but the above average learners would prefer to navigate to a particular slide in the presentation and not listen to the whole presentation.
- Keep the podcasts as short as possible. One presentation should at least be kept at a maximum size of 3 MB. Learners' mobile devices have a limited storage capacity.
- Decide on pull-technology or push-technology based on available technology infrastructure. In this study, a pull-technology was used because the population studied did not meet the requirements for a push-technology model. The researcher recommends push-technology if the infrastructure permits because it will save the learners the stress of seeking updates from the LMS, downloading and storing the podcast episodes to their mobile devices.
- Do not assume that learners, and to a certain extent even instructors, are conversant with new technologies. Take time to train the instructors on how to produce a lecture podcast and learners on how to access and listen to a lecture podcast. Learners and instructors are not as ready as we think they are in terms of using affordable and available technologies at their disposal. This practice can only yield positive results that are expected.
- Finally, the researcher recommends that instructors or lecturers as well as institutions should take responsibility for keeping up to speed with technological advancements and how those technologies could

be leveraged to enhance teaching and learning practices to improve learning outcomes (academic performance).

SUGGESTIONS FOR FUTURE RESEARCH WORK

In the process of conducting the present study, the following issues were identified as challenges which can be converted into research opportunities:

- A new model or framework for podcasting lectures. Existing podcasting models are only applicable to specific contexts. Availability of technology infrastructure is critical to choosing a suitable model for podcasting lectures.
- Absence of collaboration and interaction between learners when listening to lecture podcasts isolates the learner and this can potentially culminate in misunderstanding and failure. There is a need for ideas as to how lecture podcasts can be utilized in a much more interactive and collaborative manner.
- Evaluation of podcasting lectures before the face-to-face lecture session and during lecture sessions.
- Identification, application and validation of the relevant IS theory in the podcasting field.

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Best practices: An online doctoral learning experience

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ABSTRACT

Online education offers students the flexibility to attend to course work when personal or work commitments conflict with learning. Students who do not have the ability to commute to classes have the opportunity to continue their education online through distance learning. Other benefits to online learning are that students are not limited in their decision based solely on program suitability or availability. This paper reviews the literature on best practices for asynchronous online learning and the factors that students should consider when choosing to enroll in an online program. The authors' personal journey, beginning at their decision to enroll in an online doctoral education program, to factors that contributed positively to their online experience is discussed.

Keywords: Online Education, Best Practices, Doctoral Education, Personal Journey

INTRODUCTION

Best Practices: An Online Doctoral Learning Experience

When choosing a doctoral program the candidate must take into consideration a number of factors. For instance, how responsive is the type of program to the candidate's learning needs? Some students may prefer the traditional type of program in which the student attends face-to-face classroom sessions on campus while other students, due to their geographical location, would choose the more non-traditional approach of an on-line learning environment. Other factors, such as family responsibilities, work commitment, feasibility, and tuition costs may also determine the type of doctoral program the student chooses. The purpose of this brief paper is to discuss best practice in doctoral education by sharing the authors' personal lived experience in attending an online doctoral program.

The promotion of online learning in doctoral education has steadily increased over the last 10 years in the United States. Allen and Seaman (2005) reported that 65% of postsecondary institutions that currently offer face-to-face courses also offer the same courses online. The term on-line learning is used synonymously by some when describing distance education (Tallent-Runnels, Thomas, Lan, Ahern, & Liu, 2006). While any course that is delivered to students who are not present in a classroom can be defined as distance education, on-line learning usually means that course delivery is completely administered on the internet. Moore, Dickson-Deane, and Galyen (2011) define online learning as an "improved version of distance learning" (p. 130) and that it may be described as e-learning or web-based learning with online being the environment using computer mediated communication (Finch & Jacobs, 2011). Learning is facilitated through structured learning activities which includes consistent interactions with faculty and peers through online transactions. Single parents and working professionals now have the ability to enroll in graduate studies where program delivery is 100% online. Students tend to be appreciative of the convenience of this type of programming as it provides the flexibility that allows them to work full-time while obtaining a doctoral degree where geographical access is limited (Leners, Wilson, & Sitzman, 2007). Although online higher education remains a controversial and debatable topic in some academic circles (Adams, 2009), research conducted by Sikora and Carroll (2002)

demonstrated the favorability of this type of education amongst students. Research results revealed that students who participated in online learning were equally or more satisfied than the students who were enrolled in the same course in a traditional classroom setting (Sikora & Carroll, 2002) with often having better success than students in face-to-face classrooms (Means, Toyama, Murphy, Bakia, & Jones, 2009 as cited in Finch & Jacobs, 2012). On the other hand, the downside to online education as perceived by some relates to insufficient opportunity to interact with peers and faculty (Adams, 2009). However, this concern can certainly be addressed through course design.

Although the literature on best practice for online doctoral programming is limited, research has established the necessity of certain elements to be considered during course design (Moore, 2011; Tallent-Runnels et al., 2006). Considerations such as learner characteristics, pedagogy, faculty expertise, course technology, learner resources, learner interaction, and learner engagement have the potential to influence the effectiveness of an online asynchronous learning environment (Moore, 2011). Lim, Morris, and Kupritz (2007) identified learner engagement and course involvement as a drawback to online instruction; unless the learner is self-motivated and possesses strong organizational skills, learning online may prove to be a challenge for some learners. In order to be successful in this type of learning environment, learners must be engaged in the experience (Rao & Giuli, 2010). Evidence suggests faculty members who have expertise in online course instruction have the skill to enrich the learning experience for the learner (Kumar & Dawson, 2012; Schifter, 2000). The student's exposure to online learning may be limited; therefore he/she may rely on the faculty's expertise to help with the navigation of the course. Post-secondary institutions that offer online courses need to provide students with adequate access to technical support, academic advising, library and bookstore services, and registration. Lao and Gonzales (2005) noted that students who were enrolled in online courses believed that access and understanding of the technology was instrumental to their success. Students expect faculty to guide and support their transition from a face-to-face classroom learning environment to one that is solely administered through the Internet. Since online classroom interactions are facilitated through computers, students should have a basic understanding on how to access the Internet and participate in an online course by using learning management systems, such as Blackboard. Not only are faculty expected to provide students with an orientation to the on-line course but also on how to use unfamiliar computer technology. Since success in an online course may depend on the student's computer skills, faculty members who have experience with on-line teaching can help students overcome the technological obstacles often associated with online learning (Sampson, Leonard, Ballenger, & Coleman, 2010).

Having a teaching presence in the on-line learning environment can increase student satisfaction with learning as Kumar and colleagues (2011) discovered in the development of an online doctorate of education (EdD) program. Based on student feedback the strength of this EdD program was the teaching presence that faculty had with their students. Student satisfaction was directly correlated to faculty expertise in on-line teaching and learning, instructional design, course/program structure and organization, and timely feedback and support (Kumar, Dawson, Black, Cavanaugh, & Sessums, 2011). Furthermore, So (2005, as cited in Lowenthal & Parscal, 2008) reported that there was "a definite, consistent and strong relationship among student perceptions of interaction, social presence, and learning" (p. 4). Students are more likely to actively engage in meaningful on-line discussions if the instructor has a presence in the discussion forum (Anderson, Rourke, Garrison, & Archer, 2001, p. 5). For instance, instead of waiting for the weekend to contribute to a discussion thread, students are more apt to participate throughout the week by critically reflecting and responding to questions posed by their peers and instructor. Faculty members who facilitate and contribute to the on-line discussions create a social presence in the forum that helps guide discussions that students are having difficulty with. When instructors are involved in the discussion forum they can pose additional questions when student responses become repetitive and/or minimal. However, instructors can disrupt the flow of the discussion responses when their involvement in the forum becomes excessive and intrusive. Researchers in graduate online courses concluded faculty-student interactions can create a high degree of mutual support, and increase not only student learning but participation in the online learning community (Varnhagen, Wilson, Krupa, Kasprzak, & Hunting, 2005).

Tallent-Runnels et al. (2006) concluded in their review of the literature of online learning that faculty should strive to promote both teacher–student and student– student interaction to help learners construct knowledge. Furthermore, instructors need to participate in the discussions and provide scaffolding to help students in their discussions.

Online learning environments that establish a sense of community, offer multiple instructional strategies, promote varied learning styles, and provide opportunities for self-directed and collaborative learning promote the quality of online education (Kumar & Dawson, 2012; Yang & Cornelious, 2005). A community of online learners can be created by setting clear expectations about how students communicate within the course. Studies revealed that frequent interactions/discussions with faculty and peers had the ability to build trust, clarify ideas or issues, demonstrate learning through reflection and critical skill development, and increase motivation and satisfaction (Butcher & Sieminski, 2009; Moore, 2011). Designing and delivering an online course that is interactive yet cultivates student self-directedness is critical for influencing learning. Using the Sloan Consortium’s metrics for online learning effectiveness, Moore (2011) highlighted that on-line programs and courses should be interactive and take advantage of the medium to improve learning; learning outcomes be comparable to traditional courses; and should enhance communication to establish trust and build a sense of community. When choosing a doctoral program, students should question whether the program fits with their personal situation and learning needs. For instance, are the tuition costs reasonable? Does the institution offer financial assistance? Is the student expected to attend a face-to-face orientation on campus? Is faculty involved in the development of the course? Does faculty have expertise in facilitating on-line instruction?

A Doctoral Learning Experience

As Rao and Giuli (2010) have stated, trying to balance work, family, and other commitments can be a significant challenge when undertaking a doctoral program. These considerations, along with geographical location, learning needs and goals, and the overall financial implications were factors that the authors considered when beginning their search for a suitable doctoral program. In their study of PhD nursing students, Jordan-Halter, Kleiner, and Formanek-Hess (2006) found that the lack of proximity to the traditional face-to-face delivery was a significant deterrent for those students who lived at a distance from the institution. For the authors, the opportunity to undertake a doctoral program through distance programming was an attractive alternative since geographically their community was isolated from such learning opportunities. In addition, the flexibility to work at home and at one’s own pace around a busy personal and professional life were features that appealed to the authors. Unfortunately, some students may choose a program based on how the program is delivered and not necessarily on the doctoral degree being offered (Leners et al., 2007). Both authors began the process of identifying a suitable program by first listing and ranking which considerations were most important. Once it was decided which features were important to the authors, research into available on-line doctoral programs began. Extensive research into doctoral programs offered worldwide, led the authors to one of the few accredited universities to offer a degree in health education (DHEd).

A.T. Still University (ATSU), in Kirksville Missouri, was established in 1892 by Dr. Andrew Still as the first osteopathic medical training with the philosophy of mind, body, and spiritual wellbeing (ATSU, 2013a). Today accredited by the Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools, ATSU offers a variety of programs through its six schools, including a doctorate of health education (DHEd) program within the School of Health Management (SHM). The DHEd program is a unique credential to ATSU as students learn in a completely virtual learning environment. As one of the few online doctorate degrees in health education, students examine the current state of health education and their individual roles and responsibilities within it (ATSU, 2013b). The mission of the SHM aligns with that of the university by being a learning-centered school focused on preparing students to become healthcare leaders who will promote socially responsible practice, policy, and research to improve health and wellness (ATSU,

2013b). To promote this goal and the mission of the University, SHM endeavours to provide high quality and applicable instruction through innovative, online education; and support health professions students as they participate in scholarly activities that both anticipate and address the health care needs of a diverse society (ATSU, 2013b). The DHEd degree is a 78- to 84-credit-hour program with an applied dissertation component. The degree curriculum is now aligned with the Certified Health Education Specialist (CHES) and Master Certified Health Education Specialist (MCHES) competencies defined by the National Commission for Health Education Credentialing (NCHEC); the nationally recognized agency for health education credentialing.

The DHEd program the authors enrolled in integrated many of the best practices for online learning such as supports/resources, learner engagement and interaction, flexibility, and learner outcomes (Kumar & Dawson, 2012; Moore, 2011). One of the features of the ATSU online DHEd program is its focus or connection to practice that allows for exploration of health education issues and the learners' roles within health education; and was a key deciding factor as the authors were working as educators. Such emphasis on practice-based learning has been cited by some as an important element to online doctoral programs as it makes learning all the more relevant (Kumar & Dawson, 2012; Woodrow Wilson National Fellowship Foundation, 2005). To learn new concepts important to practice can have a positive impact on the wider education and practice community. As reported, there is opportunity for doctoral students to share new ideas and improve professional practice within their community (Butcher & Sieminski, 2009; Leners et al., 2007; Selmer, Graham, & Goodykoontz, 2011). Labaree (1997) discusses how education can be a public good. Students can bring about social change by applying concepts that they learned in postsecondary to needs identified in their community. For the authors, this permitted them to focus many of their assignments on issues they experienced in their education practice or could be implemented as teaching strategies in courses they were currently teaching. Also, each of their dissertation research is focused in ways to improve teaching and learning for health care students.

The technology of being online creates a learning environment that is different than the traditional classroom, making supports and resources for students critical (Finch & Jacobs, 2012). ATSU offers students an online preparation mini course to help potential students understand the nuances of online learning. Moore (2011) describes this introduction to the learning environment as best practice for distance education. Berge (2001, as cited in Bozarth, Chapman, & LaMonica, 2004) supports the concept of institutions offering a mini course to help familiarize students to the delivery of course learning through the use of technology. Doing so prepares students by introducing them to the learning skills necessary to overcome technical problems that may occur when enrolled in an online course. Oftentimes students do not realize how important basic computer literacy skills are to the success of online learning until they participate in an orientation course. Such initial course offerings can ensure students' understanding of the commitment required for online learning; promoting student success by ensuring there is a good fit for the student. Both authors felt that the mini course offered through ATSU appropriately alleviated fears related to distance learning. Applying study and learning skills to a mini course provided the authors with a realistic expectation to online education.

Faculty encouraged student-to-student support by creating a quality online learning community. Student-to-student support can be created by building a community of practice or offering opportunities for students to participate and interact either through course discussions and/or an online platform for non-course dialogue. In each of the authors' on-line DHEd courses, there was the opportunity to meet students in the "coffee shop", a separate place for discussion unrelated to course content discussions. The coffee shop offered the students a place to get to know more about each other, share information about past educational experiences, ask course related questions, and to receive feedback on ideas. For the authors, the "coffee shop" discussions created a social connection as more was learned about peers on a personal level than had been their experiences in traditional classroom interactions. Glisan and Trainin (2006) reported a high positive correlation between student success and social connectedness. Students who felt like they belonged in the class were more likely to finish the course than those students who did not feel connected with their peers or faculty member (Finch &

Jacobs, 2012; Glisan & Trainin, 2006). To enhance the social connectedness for on-line students at ATSU, the faculty member would join the “coffee shop” discussions. Often faculty members would share appropriate personal information with the class and provide students with a synopsis of their professional background. Even though the “coffee shop” provided students with an informal channel for discussions not at any time did the authors feel that faculty and/or students crossed professional and/or personal boundaries.

The authors noted that student-to-student support was also provided to students through opportunities to participate in peer feedback sessions. For instance, during a course on proposal preparation students were asked to assess and evaluate a peer’s ongoing written funding proposal. Having the ability to read and respond to feedback from a variety of peers not only highlighted problems that existed in the work but also improved the comprehension of the learned course material. As identified in the literature by a number of authors, peer feedback engages and facilitates student learning, allows students the chance to put previous health education learning into practice, and permits faculty the ability to evaluate student learning (Butcher & Sieminski, 2009; Ertmer et al., 2010; Lu & Law, 2012). In addition, faculty at ASTU created a quality online learning community by helping students adjust to their roles as learners by providing students with prompt written feedback on course assignments, incorporating technology to foster social connectedness, and by creating a presence in online discussions. Faculty established clear expectations for engagement, criteria for assignments, and ensured students knew how and when to contact them. One of the more interesting aspects of faculty utilizing technology to support teaching and learning was when some faculty chose to use audio feedback as a form of evaluation. The use of such technology improved learning for the authors by decreasing isolation and improving engagement with the faculty members. The use of audio feedback personalized the online learning experiences for the authors and thus, demonstrated best practices (Moore, 2011).

Kumar and Dawson (2012) identified student supports and resources as important elements for the development and implementation of an online doctoral program. As mentioned previously, support to students can come from faculty who have a clear understanding about the overall doctoral program, expertise in online teaching, and who can challenge students to think successfully (Kumar & Dawson, 2012; Varnhagen et al., 2005). Other types of support include information technology (IT) services and academic supports. The virtual classroom at ATSU was made accessible through the IT department. IT services were available 24 hours a day; seven days a week should students have any technology issues. Moore (2011) described how organizations that facilitate access for students are demonstrating effective online practices. Online support services that are consistent and include a coherent IT framework are just as important to student success as actual teaching (Commission on Colleges Southern Association of Colleges and Schools, 2000). The authors’ experience of the IT services at ATSU was excellent with very limited access issues. When the university updated the learning management system, students were provided with tutorials to help learn the system changes. What made this process go easier for the authors was that any IT change, such as the implementation of a different version of a learning management system, was introduced during a mid-semester break. The only other IT challenge encountered by one author was out of the university’s control. This author lives in a rural location with no access to high speed internet services which made it challenging when accessing some of the links to course materials or when courses required a synchronous activity, such as Google Hangout. It has been stated that communication technologies can not only increase access and flexibility in course delivery, but can also foster student interaction and collaboration (Finch & Jacobs, 2012; Moore, 2011). At ATSU, there was a feeling of inclusion for the authors as the university regularly communicated and engaged students through email, Google Hangout, and “Rockstar Fridays” where students were recognized for various professional or personal accomplishments. Another opportunity for students to feel supported was how the university created access and flexibility for doctoral candidates to defend their dissertations online. This process not only allows students to present from home but also provides other students the opportunity to observe the presentations; offering support to their peers.

At ATSU an Academic Success Team is used to support its students. The team uses academic success coordinators (ASC) along with the SHM program chairperson in providing responsive service to the students, supporting students in developing their academic progress plans, communicating important dates and policy or procedure changes, and are generally the first point of contact for support. ATSU offers an extensive resource of databases through the library for online students. The library provides access to full text journals, textbooks and other references and with the availability of the "Cyber Librarian" who offers support for students such as online lunch and learn tutorials which have been vital in keeping students up-to-date on library resources. Another important support provided at ATSU is the Online Writing Center that offers resources, tools, and tutorials for students. The Center provides structure, formatting, citation, and organization feedback on students' written assignments and dissertations prior to submission for grades. When this service was used by the authors the feedback received was directed towards correct APA formatting or structural changes to the written work. Feedback was prompt, within 24 to 36 hours, which was helpful to the authors since the assignments in the courses were due weekly.

Learner engagement and learner outcomes are two elements of best practice for online doctoral programs for which the authors' DHEd were successfully incorporated. The DHEd program had an applied research component that offered the authors the opportunity to explore and research health education issues in a local context. Olson and Clark (2009) reasoned an applied research dissertation creates new leader-scholar identity in students as well as helps to close the gap between what is learned in university by empowering students "to use research to guide and study their own practices" (p. 219). Butcher and Sieminski (2009) also discovered that the online experience required students to reflect on their roles as professional selves which increased confidence to use the new understanding, knowledge, and skill in their professional roles. This has been the case for the authors as there has been a boost in confidence to apply new knowledge and skills gained in the DHEd program in their roles as university educators. The benefit of such a pedagogical approach is that it engages students by providing deep learning to occur; such personal journeys can transform students' understanding and ideas related to education and practice (Selmer, Graham, & Goodykoontz, 2010).

Summary

There are many who believe doctorate degrees earned online are subpar to those earned in the traditional settings. There exists the perception that online doctoral programs offer poor quality instruction, lack rigorous discourse and mentoring, and are degree mills due to lack of accreditation (Columbaro & Monaghan, 2009; DePriest & Absher, 2013; Karl & Peluchette, 2013). By understanding what best practices are for online degrees can dispel such misperceptions. However, current evidence is suggesting universities that offer quality accredited online doctoral programs can provide students with excellent learning experiences. Groups such as the Sloan Consortium have been instrumental in establishing the qualities and best practice standards for online learning which academic institutions should incorporate into their programs.

The evidence on best practices for online learning has been helpful for the authors in reflecting on their online learning journey. Reflecting on what factors have made the online doctoral experience positive was established by reviewing the evidence on best practice for online learning. By making comparisons between traditional classroom education and online learning has validated for the authors that they made the right choice for their doctoral journey. High quality doctoral education can be accessed online and offers an excellent educational experience for students who may not otherwise have other options. Best practice standards for online academic programs can ensure students are getting the best doctoral education while meeting all the other commitments, such as work, family, and geographical barriers that students may have in their lives.

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Technology Integration at a Crossroads: Dead End Street or New Horizons?

Rogerio Roth

ABSTRACT

The integration of technologies went through various stages, from exacerbated optimism with over-promises to disappointment with the realities, possibilities and daily practices. Thus, the intrinsically interdisciplinary process of effective integration of the technologies to the university teaching practice is becoming less frequent and dystopian, represented by a throwback or absence of these practices. The alternative to the current model can be in a back to the past, not ignoring the technologies, but performing a rereading of good teaching practices, establishing connections and adapting them to needs and local realities. The same technology that massified in virtual form the university can provide the answers and indicate a way back to the quality.

Keywords: digital divide, environments, e-resources, platforms, role models.

INTRODUCTION

. Back to the past: master classes, blackboard and chalk.

In an increasingly technology-driven world in permanent turmoil and change - scenario where the boundaries between physical and digital realities become increasingly tenuous and ambiguous - the intrinsically interdisciplinary process of effective integration of the technologies to the university teaching practice is becoming less frequent and dystopian, represented by a regression or absence of these practices, becoming an immense challenge for educational administrators.

Many universities remain resistant, averse to running risks or even do not confer any importance, resources (financial, human, technological), training or structures that support and/or make possible the effective use of technology in their educational processes, although always be observed some experimentation derived from efforts often isolated of certain groups or individual of some professors.

The publication of theoretical work and the events industry focus the theme to exhaustion, on most occasions without proposing anything new, or suggest alternatives and/or practical and feasible solutions. The more complex is that formal education, by its very nature, cannot follow the breakneck speed of different media and technologies.

To Roth (2011) this is an empty speech which is not echoed among professors and only demonstrates the gap between who research and who have to teach.

Produce texts and teaching materials - which includes OpenCourseWare (OCW) and Massive Open Online Courses (MOOCs) - doesn't seem to have any value to the institutions. There's no stimulus, much less recognition (institutional, through similar institutions or even from pseudo-evaluators that imagine themselves owners of the truth with respect to the form and content of what should or should not be made). However, many materials produced in this way (Creative Commons) are immensely more accessed, used and referenced than scientific (or pseudo-scientific) publications those usually only serve personal purposes.

In recent years, universities have awarded more prize and merit to the curriculum of the researchers than to the professors. The important thing seems to be just the publication of scientific articles in magazines or newspapers of subjective quality and which have been submitted to peer review in an attempt to ensure that these articles and publications meet certain quality standards and scientific validity that vary by publication.

This orientation was probably correct while scientific research was limited in quantity and quality and should therefore be stimulated with active policies. "However, not attending with sufficient energy the student's training may foreshadow a new spiral of low-skilled". (Frías-Navarro et al., 2010, p. 29).

Hazelkorn (2011) emphasizes the growing obsession around the world since the rankings have become ubiquitous in the 1990s. What started as an academic exercise a reputation race with geopolitical implications. In this sense, Salmi (2009, p. 11), comments the challenges of creating world-class universities, citing a "...growing desire to compete for a place at the top of a global hierarchy of tertiary education".

What is the relation that can be established between getting a Nobel Prize and the publication of articles only in English, with the level of education developed in given higher education institution? Many rankings are absurd...

Not be ranked doesn't mean develop a low level of education and nor can it be interpreted this way, the same way that being ahead of it cannot be interpreted as having an excellent educational level. These are systems that consider only certain aspects in most cases without any direct relation with education and, as is normal in the area, averse to modernism, hindering the entry of new entrants...

This motivated European Union (EU) to launch its own ranking (U-Multirank) on 13 May 2014, using new indicators and measures a wide range of university activities in research, teaching and learning, regional engagement, knowledge transfer and internationalisation.

(Vassiliou, 2014), (<http://www.umultirank.org/>).

In a context of crisis and shortage of resources we must have common sense, perform a reading of reality beyond the immediacy, betting on innovation, creativity and heterodox solutions (Roth, 2013). It is only

possible to innovate with people who think differently and are open to different proposals and implementations, not necessarily ignoring what is established.

Demo (2012) goes further and claims that the institution does not know learn, are full of avant-garde theories for others, but they are the first not to use their theories of change. His position is that “faced with the challenges of the future, this resistance is futile and ignorant because only removes the university of the historical fulcrum, making it less and less relevant”.

The integration of technologies went through various stages: from exacerbated optimism with excessive promises to disappointment with the realities, possibilities and everyday practices.

In a certain way, may even be called the Holy Grail of contemporary education - pedagogically and technologically correct - an ideal that we seek, but that in reality we not reached or even will achieve.

Besides the lack of motivation and incentives, professors are forced to devote less time to the core activities (teaching) and disperse in support activities often working in areas diverse of their training and on which holds no experience. This includes bureaucratic management positions, publication (forced by the system, regardless of having something relevant to say or communicate), participation in scientific events (which in most cases has a lot of event and little of scientific), as well as participation of various types of evaluation panels of students or peers (Roth, 2013).

One of the difficulties to properly explore the various technologies in pedagogical practices is the lack of an adequate infrastructure in institutions, able to adapt to different conditions present and future or even catch up on the constant evolutions technological and methodological, as well as meeting the current needs of the new generation: instant messaging and social networks. These contemporary needs usually are linked to the use of tablets and smartphones, online and offline content consumption oriented devices and not its production, contrasting with the advances introduced by Web 2.0 that allowed friendlier spaces of knowledge building, encouraging authorship and autonomy.

Recalls Roth (2011) that, many universities, in the absence of proper space for experimentation, travel on the journey of the other institutions trying to replicate recipes ready (as if it were possible) and adopt fads that are always prowling the educational area.

There are also those institutions which launch themselves, effectively, in the use of new proposals with the intent, veiled or not, of being pioneers in its use.

But, agreeing with the phrase coined for Nokia by Yim (2010), the important “it's not technology, it's what you do with it”.

Sá (2004, p. 4) reminded everyone that “in the midst of the information society, at the beginning of the 21st century, the inclusion of ICT in education is, in fact, something less implemented than desirable and a subject relatively little reflected. There has been a major concern on the part of the EU, claiming for a long time the effective integration of ICT in teaching”.

These same technologies, platforms, environments and methodologies that were once considered new by the specialized literature and quickly will be getting old without having been duly appropriated by the institutions or even by professors - with the aggravation that the constant emergence of other technologies can cause unpredictable impacts.

As warned Demo (2002, p. 28), “if the technology is not properly educated, can relate to premature aging, rather than renovation, because anything older than scrap, even recent”.

Roth (2007, p. 55) detected that some problems are in the own development of courses that should train and motivate other professors, for those who belong to these teams seem to be convinced that are modern due to the fact that universities provide some resources, systems, technologies, and computers for use of the university community. But, in fact, they are what Pedro Demo calls pretentiously modern. “The doubtfully modern posture would be the one that tries to turn modern what basically remains archaic”. (Demo, 2002, p. 28).

On the other hand, what is done in Italy, about the beautiful revolutionary, democratic and constitutional rule of “universal, compulsory and free education” at all levels? The situation of Italian public universities is similar to what happens in Portugal and Spain.

According to Italian law, the fees paid by students cannot exceed 20% of the Ordinary Finance Fund (FFO) that every university receives from the state. This limit has systematically been breached in the majority of universities, and clearly an increase in fees cannot but further exacerbate this situation. At this point only bad faith can justify the lack of understanding of the fate of the university and students. The most logical consequence will be an unlimited increase of university fees and the virtual disappearance of the public university in favour of private foundations, universities of excellence, etc. (Benino, 2009).

Pressured by the lack of government resources many public universities has launched to the market (offering services as companies and private universities) in search not only of its maintenance, but survival. This only denotes the neglect of certain states, considered rich and developed, regarding the education of their people.

Certainly public universities need to overcome inertia and obtain other sources of funds to ensure its sustainability.

But that does not mean, necessarily, start charging the customers (students).

However, the universities are losing time, turned inward to their autonomy and a seemingly comfortable situation. But are threatened by unavoidable risks: the chronic underfunding of some states; the growing strategic ungovernability and consequent loss of competitiveness; the decrease in the number of students, high drop-out rates and their consequences in funding; the unsuitability of trainings and consequent loss of social relevance and prestige; the establishment of the European Higher Education Area (EHEA); and the competition of the transnational education. (Costa, 2004).

Surely it is possible to offer a product, service, and even courses, including at tertiary level, at no cost to the end user (student) by obtaining other funding sources that don't rely on governments and school fees. Google taught us this, just follow it...

In this sense innovation becomes imperative, as it can be constitute in the way of implementing new strategies that enable the university a greater contribution to society, a return to those who through their taxes have generated the resources to keep these institutions (albeit underfunded).

In many relevant areas Europe have the latest technology.

Why not in technology-mediated learning?

What we see is an incredible resistance to this model of education technologically integrated and supported as well as a focus on optimizing the use of the internet to try to replace outdated and ineffective educational systems that remain resilient even in the face of European reform that in 2010 established the EHEA through the Bologna process, among other things, required another way of teaching, with fewer master classes, more tutorials and directed work (Auni3n, 2011).

Venice is known for being a crossroads of people, knowledge and different cultures. However the current life circumstances suggest, or even require, attention to well-known warning of Vygotsky (1998, p. 130): "instruction must be oriented toward the future, not the past".

We may have available the most modern technological means, unlimited financial resources and still not produce anything - or something with quality.

Much of the students' demotivation is due to this gap between the university (always, in some measure, conservative) and the stimuli to which they are continuously exposed outside the classroom. This is not a competition with the different media in technology of sensation (would be a losing battle), but to seek follow the dynamics of today's world and, at the same time, provide resources for thinking a critical analysis.

Many professors still gives lessons, although nowadays nothing is so didactically incorrect as the action of giving lessons, having a pretence of holding the knowledge, not committing to a program previously approved, including content to be developed (day by day), methods and forms of assessment (Roth, 2013).

They confuse quality with presentiality; lack of organization with autonomy.

The vast majority of selection processes of European university professors gives documentary form (*curriculum vitae*) and not by impartial and transparent public tender.

In these processes normally is not provided any assessment of knowledge and skills of any kind not even didactic. And the paper accepts all...

In the absence of didactic training (obsolete or updated), professors from other areas, apart from education, replicate the old and outdated practices they received from their trainers (and often use the same materials they received). Even those who bother to study or develop didactic skills do, usually, with who develops the same retrograde practices.

Innovate in education is an immense challenge since whoever evaluates sees us with different eyes (*status quo*). People who do not want things to change are those who for some reason feel they have a disadvantage in changing. The question is more educational than technological, because the pedagogy remains focused on traditional instructive proposals, not to mention that resists becoming technologically sound (Evans, 2001; Stoll, 2000).

The effective integration of technologies in supporting education is a challenge that so far has not been faced with depth (Moran, 2003). We have done only adaptations, experiences, small changes. Many of the failures can be attributed to this strategy because most often we limit ourselves simply to pave the cow path (Roth, 2011). This *modus operandi* is nothing more than to remain doing something the wrong way, only more quickly.

Integrate and institutionalize the education practices mediated by the different technologies in a particular university is much more than installing a version of Moodle (or any other LMS), performing some training workshops (sometimes not even that) and afterwards, letting the usage depend on the goodwill of each professor.

The lack of quality training for professors, the lack of adequate support to formatting and content production or even unexplained lack of investment and priorities has produced opposite results to those expected (imagined), being represented by total or partial lack of use and even of the outdated existing technologies or even a return to conventional teaching practices.

2. Learning Environments & Platforms

When related to virtual presence or at distance, environments and platforms refer to the same systems that allow some interaction synchronous or asynchronous.

In constant update, evolution or revolution; the effective use of these systems - or not - and its suitability to educational practice is something that always stumbles on lack of experimentation free from prejudices. This can be translated as lack of will, lack of interest, lack of motivation, lack of resources, lack of equipment or even lack of recognition.

The blind adoption of determined environment or technology (open source or paid) or even their lack of update (latest versions) is explained by the fear that some innovation or paradigm shift can arise at any time and take by land all the efforts (however slight) in a particular diverse direction or other platform.

The market of Learning Management Systems (LMS) has several, subjective and often unreliable information. The website Capterra compared LMS 263 (v.2 - January 2014) in several respects (Customers, Users, Twitter, Facebook and LinkedIn)...

(<http://www.capterra.com/learning-management-system-software/#infographic>).

The analysis of the twenty most popular systems puts the Moodle in the first place.

Following we find: Edmodo, ConnectEDU, Blackboard, SumTotal Systems, Schoology, Cornerstone, SuccessFactors (SAP), SkillSoft, Collaborize Classroom, Desire2Learn, NetDimensions, Docebo, Instructure, Interactyx, DigitalChalk, Latitude Learning, eFront, Litmos and Inquisiq r3.

With respect to the number of clients, the five most installed systems are: ConnectEDU (135 k), Edmodo (120 k), Moodle (87,1 k), Collaborize Classroom (48 k) and Schoology (35 k).

And regarding the number of users, the five most commonly used systems are: Moodle (73,8 m), SumTotal Systems (38,5 m), ConnectEDU (20 m), Blackboard (20 m) and Edmodo (20 m).

When the aspect is presence on social networks, the five systems most followed are:

Twitter: Edmodo (55 k), Blackboard (23,9 k), SuccessFactors (SAP) (18,4 k), Moodle (14,3 k) and Instructure (12,4 k).

Facebook: Edmodo (38,1 k), Cornerstone (28 k), Docebo (21,2 k), Moodle (15 k) and eFront (8,11 k).

LinkedIn: SuccessFactors (27,8 k), Blackboard (16,6 k), Cornerstone (12,9 k), SkillSoft (11,5 k) and Desire2Learn (11,3 k).

But when we checked all 263 LMS referenced in research, we started to notice the limitations and tendencies. Besides the little emphasis given to the Sakai system, no reference has been found about the TelEduc (UNICAMP).

(<http://sakaiproject.org/>), (<http://www.teleduc.org.br/>),

(<http://www.capterra.com/learning-management-system-software/#all>).

The issue is not attempting to define what the best system or even the most used. Roth (2004) has been investigating, compared and used different systems. In this sense it would be more appropriate to check how much the vast majority of these environments literally stopped in time (focusing on messages, discussion forums, chats, mailing lists, newsgroups, websites), the few that really evolved into a new concept - or even those that already been created under a new approach - and the main, how little of the resources are actually used.

Hardly anyone who designs the systems uses them or even is who an actually use.

All the technologies needed to access the same set of content through different media are available openly, in other words, without direct costs of acquisition associated. And it facilitates the exchange of contents (SCORM - Sharable Content Object Reference Model). (Roth, 2013, p. 8, p. 53).

The various types of possible connections, made by cell phones, tablets and desktops directly or through immersive virtual environments (or not), provide a variety of options.

But, despite the many plug-ins, many environments were not made to the current needs of new generations, not to mention that the mobile world dictates the desktop trends.

The trend to bring your own technology (BYOT) - also called bring your own device (BYOD), bring your own phone (BYOP) and bring your own PC (BYOPC) - refers to the policy of permitting employees to bring personally owned mobile devices (smartphones, tablets and notebooks) to their workplace, and to use those devices to access privileged company information and applications (Bradley, 2011).

(http://en.wikipedia.org/wiki/Bring_your_own_device).

The term is also used to describe the same practice applied to students using personally owned devices in education settings (Lee, 2012).

In this sense, BYOT is an educational development and a supplementary university technology resourcing model where the home and the university collaborate in arranging for the young's 24/7/365 use their own digital technologies to be extended into the classroom to assist their teaching and learning and the organisation of their schooling and where relevant the complementary education outside the classroom.

Gartner (2012) said that BYOD is the most radical shift in enterprise client computing since the introduction of the PC. This wave and advancement in technical infrastructure and in learning technology, opens for new ways of teaching in the classroom.

Probably, the main benefits from BYOD at universities can be at removing costs and efforts to acquire, administrate and maintain own laboratories, as well providing interactive classroom tools that provide better user experiences.

In 2014 consumption of media from smartphones will overtake consumption via PC's (eMarketer). Another study (Pew Research Center) reports that 74% of teens use the Web from smartphones. More than half of young people only uses this type of cell phone to consume content. And 89% of those contents are consumed via Apps (Smart Insights). That is, in only 11% of the cases is that the browser is the chosen channel to access content. (Oliveira, 2014, p. 6).

(<http://www.emarketer.com/>), (<http://www.pewresearch.org/>), (<http://www.smartinsights.com/>).

Universities are adapted to this type of demand? At least a Responsive Web Design (RWD)?

In August 2009, a different design of environments like Schoology emerged, based on the philosophy of social networks and instant messaging support.

No exceptional disruption was perceived and five years have passed since then (until 2014) that in information technology represents a universe of possibilities.

(<https://www.schoology.com/>), (<http://en.wikipedia.org/wiki/Schoology>).

However it is a proprietary system (paid) which inhibits many universities that do not realize or even visualize some justification for its acquisition.

The reverse logic probably refers to the observation that, if there is no motivation or incentives (by institutions) to (professors) use the resources of open systems available, why pay for a system that probably will not be used too often?

The same can be said of immersive 3D environments like Second Life.

(<http://secondlife.com/>), (http://en.wikipedia.org/wiki/Second_Life).

This virtual environment was a fad in the biennium 2006-2007. Remains active, without the spotlight of the specialized media, but most users (residents) left Second Life, migrating to social networks like Facebook (not necessarily back to "real life", but usually returning to "real identity").

The system of Linden Lab never found the right concept to be used for education. Many companies and universities from the real world have invested in virtual islands just to have a presence in this new world. Are these pretentiously modern trying to score land even without knowing what to do with it. Something like trying to be present not to be forgotten, extinct or even swallowed by the revolution - that never happened.

When users have different identities and often seek this environment as an escape from their normal lives - as if it was possible another life - what is the relationship with real life (where are the physical companies and universities)? None...

However the testing and experimentation are always valid. We cannot criticize what we don't know. An open source option is the OpenSimulator (OpenSim), a less restricted version and financially free of Second Life's architecture.

(<http://opensimulator.org/>), (<http://en.wikipedia.org/wiki/OpenSimulator>),

(http://opensimulator.org/wiki/Main_Page), (<http://elearning.unica.it/opensim/>).

Environments such as Moodle (considered the most popular by Capterra) are installed to exhaustion mainly because they are free (without direct costs of acquisition - because there are always maintenance costs), has a considerable user base (many congeners) and are more than enough for the few uses that most faculty confers, practice or even demonstrates need.

Moodle is a project with more than ten years of life. Technologically speaking this is relevant and cannot be ignored. The concept, created in 2001 by Martin Dougiamas, turned into 20/08/2002 in its first version (Moodle 1.0) which featured 10 releases (1.0 to 1.9) and several intermediate versions (up to 1.9.19). The second version (Moodle 2.0) already had 8 releases (2.0 to 2.7), and the current version is 2.7 (12/05/2014).

All versions prior to 2.3.11 were discontinued, but that does not mean they are out of use, but only that the support is no longer provided.

The version of Moodle more used worldwide is the 1.9.x (without current support). That is, more than 50% of all installations have not evolved to version 2 (and we are already on the eve of version 3). A quick analysis reveals that Moodle does not evolved much. Even the said support has become unnecessary for most users.

Although both the official website as the references found emphasize that the system evolves constantly adapting to the needs of its users, in fact it appears that the design of Moodle remains the same, centred in disciplines, forums, etc.

Besides the system does not properly meet the current needs of the students it turns out that the vast majority of the facilities are not even updated, since most professors even explores the basic features available since the first version and do not produce content.

Probably the wrong question is something like:

Why update if it is working properly?

Actually nothing is working well nor from the side of the Moodle developers much less in the universities side. The project of the LMS, in a way, stopped in time and the use of it is minimalist.

The vast majority of institutions (which not even update installed versions) keeps in use because besides not import in direct costs of acquisition is a way of them demonstrate that are technologically active and engaged - although it is just another misuse technologies.

This program is freely available as open source (GNU Public License) and can be installed in any operating system (Windows, Linux, Mac) that can run the PHP language. As the database can be used MySQL, PostgreSQL, Oracle, Access, Interbase or any other accessible via ODBC. (<https://moodle.org/>), (<http://en.wikipedia.org/wiki/Moodle>).

The Moodle website has some statistics that can not be interpreted without context (like everything in life). On 17/05/2014 would be 64,630 registered websites. Not mean that they are active websites, much less that are updated. (<https://moodle.org/stats/>).

This environment is being used in 235 countries and the ten largest users are United States (11015), Spain (5478), Brazil (4329), United Kingdom (3667), Mexico (2664), Germany (2368), Colombia (1754), Italy (1704), Portugal (1593) and Australia (1513).

The critique here is not about Moodle (or any other conventional environment). He fulfils reasonably well the function for which it was designed (in 2002). The problem are the users (professors) that don't use all their resources or even use the environment incorrectly, in most occasions only as a file repository - the same materials that were intended for xerographic copies.

But, despite several updates and several plug-ins developed and available, the system often seems a patchwork. An analysis of the Moodle source code shows different types of modelling without a default, redundant codes, low performance and errors that persist even with new versions. The migration process from a previous version to a newer can be a challenge and generate many problems - which ends up discouraging many universities to update what is working.

In addition to not adapt to current needs correctly the system is still student-centred. The paradigm of the distance education ended up influencing classroom learning and teaching-learning process before professor-centred evolved initially for the student and then to communities, coexistence networks established by the relationship between professor-student(s) and between students. (Roth, 2011, p. 7).

Of course there are many variables to be worked that prevent or hinder the development of these initiatives. The arguments most often cited are lack of time and skills of professors; along with the absence of a system of recognition or curricular reward. In addition, the lack of interest in pedagogical innovation is also a significant barrier.

But it is likely that, when universities are filled with animators of collective intelligence aware of the relevance of guiding, observe and record the development of their students, they will be called simply "professors". After all, the professor's role always been helping students to learn. (Roth, 2011, p. 43).

Any proposal, technology or new methodology on the horizon?

If were alive Carl Sagan would probably say yes. "Somewhere, something incredible is waiting to be known". (Gelman et al., 1977, p. 53).

A hasty reflection trying trying to analyze where we came from and where we are going - related to education - does not provide the answers since the problem has never been technological.

We do not need to develop something new to make the educational practices more interesting. There are many environments and platforms available and innovation does not necessarily involve the invention or development of something completely new, but through the use of what already exists, often free of charge.

It can be a rereading of old ideas, a recombination or new approach about something that already exists, or simply an imitation of something that exists elsewhere. A creative idea does not need to revolutionize the world, be totally unique, radical, extravagant or even fun, but it has to be something socially useful and that solves a real problem.

In 1995 Steve Jobs quoted a phrase attributed by him to Pablo Picasso: "Good artists copy. Great artists steal". And added: "We have always been shameless about stealing great ideas".

(Denning, 2011), (<http://www.youtube.com/watch?v=TRZAJY23xio>).

Ethics aside, what can be seen as lesson is that not necessarily developing an original solution can lead to success. More important than this would be to use effectively than there is already available, often without costs of acquisition, although developed by others (such as Moodle, for example).

The Ca' Foscari University of Venice (UNIVE) following the minimalist trend of use, practiced by their European counterparts, offers Moodle in several instances.

The main is hosted in <http://moodle.unive.it/>.

The Department of Environmental Sciences, Informatics and Statistics (DAIS) ever experienced local facilities of restricted use, including a specific version for external courses and certifications. (<http://moodle.dsi.unive.it/>), (<https://moodlecertif.dsi.unive.it/>).

The study of languages seems to be the area of Ca' Foscari that gives more attention to the environments, with the production of small content and many tests (Quiz). This activity module allows to the professor to design and build tests with a variety of question types, including multiple choice, true or false and short answers. Moodle keeps these questions in a question bank allowing the recycling (reuse later).

It is a exception perceived also at DAIS and not the rule in established practices. However, this type of test that Moodle provides and that the University Language Centre (CLA) and DAIS use are more related to the memorization and simple answers than the problem-solving.

(<http://claonline.unive.it/>), (<http://cladidattica.unive.it/>).

Someone could argue that problem solving does not apply to certain areas such as teaching languages or computer science. On the contrary...

A parrot can also memorize not only words, but whole sentences and repetitive logic without knowing what to do with them later or even when the conditions of temperature and pressure are not exactly the same previously verified.

My latest experiences (as a student) related to learning foreign languages (Ukrainian and Italian) were disappointing. In both cases the teachers had a good command of the language. But seemed to be more prepared to improve students' language dominance than teach from scratch. And no one can improve what has not as a basis.

These were conventional courses, based on books and with a lot of homework. Nowadays (pedagogically sound approach) nobody else uses the homework as teaching resource.

In Germany, for example, children leave their books at school. Fontein (2012) stated that "no child would be having their free time dominated by doing school work".

No child, and certainly, no adolescent or adult. This trend fortunately starts being followed in other countries, such as France and Australia.

(Matthews, 2012), (Walker and Horsley, 2012).

But the teaching languages persists in this old approach (to transfer home what should have been done in the classroom) what will consume classroom time to correct the lessons later.

The lack of conversation practice, lack of classroom support and (at last experience), the replacement of hours of presence classes by exercises over the internet is a misuse of that technology, a fake presence and modernism in reverse.

Other facilities related to the teaching of languages in Ca' Foscari are found at the Linguistic Laboratory (that serves two departments) and the Center for Language Teaching, Department of Linguistics and Comparative Cultural Studies.

(<http://lingue.cmm.unive.it/>), (<http://venus.unive.it/italslab/>).

It gives the impression that Ca' Foscari has several redundant areas, which overlap and even find themselves in internal competition. None of them establishes a market differential, new methodologies or even the correct use of technologies.

3. Video and Video Conferences

A picture is worth a thousand words? Fernandes (2009) mocks the phrase attributed to Confucius: "A picture is worth a thousand words. Try saying it with a Picture".

Some situations are impossible to be properly represented or identified only with an image. On the other hand a text allows various interpretations according to the reader's imagination. But this bipolarity doesn't apply to a video or even to videoconferencing. After all when we join several images in sequence (make a video) with words we will always be the best of both worlds.

Even in the CLA where we found some content production and exercises to assist the teaching of languages, the most that we found were audio files.

Activities performed mainly at a distance or even in person -synchronously or asynchronously - found in videos and in videoconferences an indispensable support to its effective understanding. It is a way to meet people (not through a static photo or even some text that can be authored by others) and is connected directly to the safety of traditional evaluations made at distance.

The case of teaching and study of languages is important, since without this support if they lose the facial expressions and, in the specific case of the Italian language, the use of hand gestures - so characteristic and so significant.

Remove or tie the hands of an Italian and a large part of its power of communication is lost. It is not the essence of communication, but certainly a necessary environment to emphasize the statements. The practice is cultural and so entrenched which can be observed during the use of cell phones (including hands-free kits) without the video is being used or even another person be present.

The widespread increase of available bandwidth in the various types of internet connection and the ubiquity of video cameras on all smartphones and tablets only collaborate to increase the gap between the reality (market and users) and the practice of universities.

Social networks have moved towards this new model, introducing video plug-ins. What was previously limited to specific applications (Live Messenger, Skype, etc..), became common place to meet the demand. The same happened with the creation of plug-ins for the various LMS, unfortunately without the same attention and/or use.

Even with the quality of the new specialized systems of videoconferencing like telepresence what we have seen is an occasional use (normally limited to scientific events) and not in educational practices.

4. In-person environments

Some authors such as Tapscott (2009) believe that universities will collapse if they don't follow the techno-social and cultural changes that are inevitable. Others like Wyatt (2001) had imagined that the use of technologies (Web-based learning) would be the beginning of the end. But they were wrong...

Over the centuries since the founding of the first institution in the Western world, the university has faced many challenges and demonstrated a remarkable adaptability and resilience (Santos, 2002).

However with the evolution of socio-economic contexts increasingly knowledge-based, these institutions have been subject to unprecedented pressures and challenges.

Faced with a reality where the computing tends to become increasingly pervasive, many people believe at the end of the use of paper and consequently the end of printed books - now that digital books are increasingly ubiquitous and available.

The tablets and smartphones are around. How old will survive?

Offering distance courses in integral scheme of e-learning or even blended is no longer enough to become a reference or even excel in an EHEA, which pasteurized offers, standardized content (making equal different courses), stimulated the mobility and where a same paid course coexists with an identical free of charge.

In times where all universities may appear to be (on the internet) what they see fit (crap marketing scheme), where the offerings of courses through e-learning multiply exponentially how to stand out in chaos?

What is the perfect connection to do not get into the banality of similar offerings?

The answer, to Roth (2013), comes from own question and applies to any endeavour, including educational, that want to highlight and/or start a new cycle of life: innovate, find a right concept, and establish a market differential.

This search is not limited to virtual environments but must be extended to the in-person environments, local. If we do not have good physical environments for production, support, teaching and study, everything that we offer at distance will be just false advertising.

Ca' Foscari developed the CFZ Zattere (Cultural Flow Zone).

(http://www.unive.it/nqcontent.cfm?a_id=161749).

Conceptually the model is innovative. It is a cultural centre, an open, comfortable, polyvalent space, dedicated to encounter and exchange between students. In CFZ is possible to find services and training courses, extracurricular activities that complement the studies, projects designed and realized by students and spaces for relaxing, reading, studying and consulting books.

New spaces of coexistence is a trend also found in Portugal. Diogo Moreira, SAS manager of the Polytechnic Institute of Viana do Castelo (IPVC) explains that: "We have come to the conclusion that the model of canteens and bars was inadequate to the needs of students today and decided to radically change the concept of food services, going to be centred on the importance of providing an experience to student that goes beyond own meal".

This Portuguese institution is ending with the traditional spaces of the refectories, converting them into social areas where also you can eat and which will be accessible to students at any time of day. (Silva, 2014).

5. Role models

Sartoretto (2014) said: "Did you thought about improvements to my Course in Moodle?"

"Calcolo Mod 1 e Mod 2 [CT0309] - Prof. Sartoretto".

(<http://moodle.unive.it/>).

Probably the question was a little more complex than this.

Without any motivation or benefit, how to make disciplines such as the calculation become more attractive and interesting for students of informatics who often do not realize or even don't care about connections between the means and the ends?

I think it begins by changing professor's posture which includes stop giving conventional classes (traditional). Look the syllabus with other eyes (through the clients' eyes) and establish a contract with students. Identify real connections between contents, subjects, course and student needs (put yourself in their place), building bridges. Not be limited to the theories and exercises that are unrelated to any problem or real situation. This means find and/or develop examples and practical situations where the content to be developed are really important, essential. Which can be visualized with the use of images, photos and videos and not just numbers and words (like this text).

Without this connection is only distant theory, tedious even boring. And the feedback will be the lack of interest and participation because personal goals will only win the discipline and move on giving attention to what really matters (as if the Calculus and logic did not matter).

But how to be innovative and overcome what is outdated?

How to get rid of old formulas and make room for the unexpected?

Starting to make room for the unlikely (but not impossible).

In addition to the logical levels 0 and 1, a digital circuit can still present a third state (tri-state). It's called the state of high impedance, where the output does not contribute to the high level, or to the low level. The classical bit (digital) can have the value of zero or one. Already the quantum bit can simultaneously load two values.

(http://en.wikipedia.org/wiki/Three-state_logic), (<http://en.wikipedia.org/wiki/Qubit>).

The Lifehacker reminds us. Did you are asking the right questions? (Drager, 2011).

The Fast Company brings several suggestions on how to do this... (Berger, 2011).

“Where do I start?” could be a good option.

When we deconstruct stories of innovations we found the source of the success of companies that offer products and services before unthought always converging in a simple question that is often considered a bit provocative, naive or even a little insane: “What if?” ...

Williams (2011) of Frog Design talks about how this strange and unusual question was the impetus for the launch of Little Miss Matched, a company which proposes the use of socks that don't match on purpose. One among many examples cited as new and innovative business that began with what he calls "a disruptive hypothesis" (a hypothesis which tends to disorder).

(<http://www.frogdesign.com/>), (<http://www.littlemissmatched.com/>).

Suggests five steps to identify disruptive opportunities: 1: craft a disruptive hypothesis: be wrong at the start to be right at the end; 2: define a disruptive market opportunity: look where no one else is looking; 3: generate several disruptive ideas: make the ordinary unexpected; 4: shape them into a single, disruptive solution: avoid novelty for novelty's sake; 5: make a disruptive pitch that will persuade internal or external stakeholders to invest or adopt what you've created: under prepare the obvious. over prepare the unusual.

Another pioneer is Netflix, whose business model answered the question: "what if a video rental company didn't charge late fees?"

(<https://www.netflix.com/>).

The large number of technological innovations most sought on the internet was born from an attempt to answer ambitious questions like "what if we could somehow crowdsource everything a city has to offer?" (principle of social network Foursquare) or "what if we could get any question immediately answered by the world's smartest people in the world?" (like Quora).

(<https://foursquare.com/>), (<http://www.quora.com/>), (<http://en.wikipedia.org/wiki/Crowdsourcing>).

It's not bad discover that we don't have all the answers.

Just start asking the right questions.

Progress often comes from those who dare to question: "What if?" ... Complete this question the right way is a great shortcut to ask the right question.

After all, it's not just a matter of being willing to question; need to know how to question.

What still prevents the Italian university to surrender to technology is the resilient veiled practice of *magister dixit* (argument referring to an authority regarded as unquestionable), for whom the opinion of a master (professor) did not allow replica. The term was used by professors in Florence and throughout Italy around the year 1600, to impose silence students who questioned the theories of Aristotle, considered the master of astronomy. When a student at the university questioned some theory of Aristotle, professors soon interrupted saying "*magister dixit*", which means "the master said - it is not discussed" and could end the matter.

De Morgan's law was pointed to by Sartoretto (2014) as a problematic topic to be transformed into attractive to undergraduate students.

(http://en.wikipedia.org/wiki/De_Morgan's_laws).

These theorems are proposed to simplify expressions in Boolean algebra. Define rules used to convert logical operations OR in AND; and vice versa.

Several videos have been produced on the subject. For example, those of William Spaniel:

Logic 101 (#19): DeMorgan's Law, Part 1 (<http://www.youtube.com/watch?v=xu6kE6Meyb0>).

Logic 101 (#20): DeMorgan's Law, Part 2 (<http://www.youtube.com/watch?v=6NEAEeDoqNQ>).

Teaching materials also exist ready, to exhaustion. For example, some distributed as OCW by Massachusetts Institute of Technology (MIT):

Probability and Random Variables - by Scott Sheffield, MIT (Course Number 18.440).

(<http://ocw.mit.edu/courses/mathematics/18-440-probability-and-random-variables-spring-2011/>).

More recently and already shaped as course, some MOOCs as provided by different providers like Coursera.

Making Better Group Decisions: Voting, Judgement Aggregation and Fair Division by Eric Pacuit, University of Maryland (<https://www.coursera.org/#course/votingfairdiv>).

The use of formal logic in law courses is suggested by Lawsky (2010) which presents a practical problem using De Morgan's law.

And Volokh (2008) discusses how a Supreme Court case (USA) seems to conflict with De Morgan's law.

There is no subject that cannot be turned into a practical problem, making connections between theory and everyday situations that allow a better understanding.

And the same technology that allows mass the sharing of these contents allows to generate individual versions of the same question.

Facing a certain problem (proposed by professor) students may have different interpretations and choose different paths to find their solutions.

Even the highest mountain has many faces to be climbing. The important thing is to get to the top, no matter which way.

But while the internet offers a plethora of information (many do not correct or even trusted) rests with the professor guiding this crossing avoiding certain roads or even driving students to the desired direction.

When the internet became graphical began exploring a system of hypermedia documents interlinked and executed, known as the World Wide Web, Web or WWW. These terms translates as a worldwide web while the internet nowadays is much closer to the concept of a huge unorganized forest (which has everything and anything can happen, including getting lost) than an organized and limited spider web.

Doesn't fit these days waste time copying theory on a blackboard, dictate lessons to students, make photocopies, make pdf files for download or even read in a textbook. All these information are available through various formats (text, image, video), courseware (OCW) courses (MOOCs), blogs and websites.

Since 2004 students in the Woods College of Advancing Studies at Boston College have the opportunity to participate in the development of a new form of distance learning that combines interactive virtual reality with collaborative online course environments and classrooms.

(<http://www.bc.edu/schools/advstudies/>),

(http://mediagrid.org/publications/presentations/Immersive_Education.pdf).

These experiments led to a series of events, starting by Enabling the Age of Immersive Education (Boston, 2005), the creation of the Immersive Education Initiative in the same year and the sequence of events iED since 2007.

(<http://www.immersiveeducation.org/>).

These events, like the current edition (IMMERSION 2014) address the personal and cultural impact of digital technologies such as wearable computing, virtual reality (VR), augmented reality (AR), mixed reality (MXR), neural interfaces, affective computing, neuro-gaming, telepresence, virtual worlds, simulations, learning and training systems based on games, immersive MOOCs and totally immersive environments, like caves and domes.

(<http://summit.immersiveeducation.org/>).

They are new and not so new concepts that could generate new products to move the industry and thus moving the world. Although several universities are present realizes that the real players are sized companies focused on games (is what moves this technology) and greater computing power necessary.

Back up that way to the recurrent insistence of carry the world of gaming for education (learn by playing) - coherent strategy while held as a further means, even not to thwart the new clients, created in this reality.

Most often these are distant technologies of university reality - I speak here of public universities in countries where the donation of resources is not common practice and available resources always seem insufficient to the needs...

These universities that, in front of a set of uncertainties as to its own maintenance avoid to invest or even support certain fads and are limited the free options, how to install an LMS, a digital repository (as ARCA) and maintain a website often without dedicate versions in other languages that meet the needs of its external clients. (<http://arca.unive.it/>), (<http://www.unive.it/>).

Total immersion environments as the caves and domes are fantastic and with almost unlimited possibilities of use: Avango, CATIA, Cave5D, CAVELib, CaveUT, CoVE, EON Icube, Equalizer, inVRs, libGlass, Mechdyne's Conduit, P3D VirtualSight, Pro/E, Quazar3D Immersive, Quest3D, Syzygy, TechViz XL, Unigraphics, Vis5D, Vizard, VR Juggler, VR4MAX, Vrui. (http://en.wikipedia.org/wiki/Cave_automatic_virtual_environment).

But specifically with respect to education, what do we do when we finally have access to the Holodeck (the most perfect of immersive systems, able to reproduce perfectly the real life with people and environments)? (Bilton, 2014), (Moursund, 2014), (<http://en.wikipedia.org/wiki/Holodeck>).

We will start a third life - because the second (Second Life) did not materialize?

Or simply continue to reproduce the old techniques and approaches that, unfortunately, are still in use?

Some of the most important technologies are those that become part of the environment. Weiser (1991) considered the father of ubiquitous computing (omnipresent) wrote that "the most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it".

Nowadays we can transform the house of Flintstones on home of the Jetsons.

But unfortunately the children of both continue to attend the university of the first.

Many professors are still trying to teach as they did in the 20th century, or worse, 19. It is a cultural atavism. Many of them are digital immigrants compared to students who have already been created in this virtual world. (Roth, 2013).

We will continue to teach through immersive systems or we will recover what has been lost, do a rereading of good practices and really provide students an innovative experience (not just technologically speaking)?

If we are not able to make an interesting classroom experience, what makes us think that a virtual environment can do (by itself) more quality into the process?

O even we'll desist to manage processes and lead our students to their own discoveries, keeping the focus (no dispersions), controlling the excess personal exposure and avoiding procrastination?

With the growing popularity of social networks and personal blogs, the potentially dangerous practice of oversharing became commonplace.

Oversharing is the act of sharing too much personal information with people who are not necessarily prepared and qualified for it.

Different people may have different ideas about what constitutes oversharing, so they may not realize they're making others feel uncomfortable.

The oversharing could be considered an addiction of the new generations?

When we have more means in our hands, we need to expose more information and feelings? What is the best way to prevent or remedy the problem?

The fundamental lesson is invariably the same rule for all social networks: never forget that the whole world is watching.

There's too much information and knowledge of less in the use of the Internet in education. There are lots of data, lots of information available, not always reliable. In the information, data are organized into a logical, code or structure determined.

To know is to integrate the information in our benchmark, appropriating it, making it significant for us. Knowledge does not transfer, knowledge is created, is built every day.

Many students scatter in the tangle of possibilities and do not seek what they should, leaving drag to areas of personal interest. It's easy to waste time with information little meaningful, staying on the outskirts of subjects, without deepen them, without integrating them consistently. The process of knowledge happens when filtering, select, compare, evaluate, synthesize, contextualize what is most relevant and meaningful.

Our students become more ignorant, find ready answers, pasteurized texts and perform many copies authored by others. The ethical side of search, adapt and then create and adopt is being replaced by the simple act of adopting ready answers that don't fit exactly to all new challenges.

Conversely, the Internet mirrors the real wishes of every one of us, desire to be out of control of states or even of other institutions, which through other media are always "guiding us", offering the "best" economic and cultural products.

For those who are procrastinating (deferring an action), this results in stress, feelings of guilt, loss of productivity and shame in relation to the other, for not fulfilling their responsibilities and commitments. Procrastination can be considered normal, but it becomes a problem when it prevents the normal functioning of the actions.

People are losing focus and the internet is becoming just a place for fun and to pass the time (occupy) the time, mostly with things that don't add absolutely nothing and still exposes too much. That is, has nothing to do with education and with everything good that you could obtain from technologies when used correctly.

If we don't even utilize the potential of what we have at our disposal (I speak about what has come to stay and not temporary fads) how to think only in evolve technologically (in sense of hardware and software) without remembering and meet the requirements to make this practice effective and correct?

Current needs are no longer focused on the accumulation of knowledge.

The focus should be the ability to solve problems.

Given this context of variables and uncertainties, professors need to do their part (lifelong learning is a concept that should be applied to everyone and not just for others) seeking the update (didactic and technological) and a way to exploit their creativity and willingness to innovate (if these exist even in latent form). In this sense, must act autonomously, seeking new viewpoints, new solutions and try to do something different from the usual.

You do not get different results doing the same things and the same way.

The Web 2.0 may have facilitated many things as the creation of search engines (Google, Bing, Yahoo, etc.), the collaborative websites (Wikipedia, YouTube, Twitter, etc.) and social networks (Facebook, Google+, LinkedIn, etc.). But nothing prevented the authorship in the Web 1.0 or even earlier when the internet was not graphic or when it did not exist.

Not everything is available on the internet and never will be. Books and publications of quality usually are printed and sold or have access to controlled content - and not offered for free or even possible to be localized by any search engine like Google.

Just a quick comparison between centuries of resistance that has printed books and how fragile are the eBooks that are in the cloud. A single data communication failure, power supply failure, server failure - or, why not remember an atomic blast - so that everything gets lost or becomes inaccessible.

Will be the Web 3.0 (semantic) which will give the solutions? Or the Web 4.0, Web 5.0, etc.?

What is the limit to induce in the people concepts that don't exist and that can become reality (or not) and are geared more to the infrastructure (systems, websites and databases) than end-user usability?

The difference between being the author, copier or just reader not settles by technology, but by an educational issue, moral, personal.

The art of writing involves practice and also reading. We can provide a technological environment (add a framework) to these matters but will always be a means and not an end.

Is it possible to make education in the 21st century without the use of the latest technologies?

Of course it is possible. It would also be possible to write this text by hand or using outdated technologies as a typewriter (manual, electric or electronic) or even some PC of the first generations.

The fact that we use the latest media does not imply necessarily in best quality. But responds to the expectations of other stakeholders, that is, of who is on the other side. And this reduces frustration...

My best texts do not appear on the screen of a computer (or any other contemporary device) but of a sheet of paper and a pen when I wake up at night or even dispersed during the day, not concentrate on what I have to do.

The technology allows me to work these texts, fix them, appropriate form and content. But the original ideas never come this time...

The musician Nei Lisboa expressed this technological disenchantment. “The email is phone without embarrassment, fax no busy signal, answering machine without babbling to the void. But I wonder if I'm not missing received a long letter, with those pages of custom calligraphy, well sealed, chubby and warm waiting for me in a real mailbox. We are getting wonderfully unhappy”. (Castro, 2006).

Similarly will not be the technologies (outdated, current or even future) that will by itself - and magically - give a better quality to the educational activities and rectify contemporary practices.

Everything goes through experimentation, adaptation, adaptation, training, testing and finally production. After identifying which technologies fit best on the reality of the university and students, take ownership of the same (master their use) and surprise people with innovative proposals.

There is also the need to venture out of the commonplace and get something uncommon, unusual, carrying the practices beyond the small horizons.

Buzell (1989) quotes the statement of Otto von Bismarck: “You are all idiots to believe that you can learn something from your experience. I prefer to learn from the mistakes of others, to avoid my own mistakes”.

We learn more from our mistakes than from our successes and no success story can be replicated like a cake recipe. There is no magic formula, turnkey solutions or models to be followed and repeated.

Homework of the type do as I say and not as I do, I have to do, or even am forced to do; are empty when we presume to teach, demonstrate, or even suggest something that never practiced in our personal journey.

We do not live in a world of absolute truths, but always transient.

A few years ago the smallest perceived particle as existing in the universe was the atom.

And where are we today? (Higgs boson). Where we'll be tomorrow?

And in the coming years?

In Denmark, since 2011 students can do their exams connected to the internet using all sources of information available to develop an original work, namely, to give answers to a demand, to solve a particular situation that simulates their needs in current real world.

(Cisco Systems, 2011).

It's more a resource, just like in real life (creative chaos).

Many people associate the word chaos to disorder or something negative, but is inappropriate, because even scientifically the creation came from chaos (all possibilities).

The same technology that massified in virtual form the university (previously massified presentially) can provide the answers and indicate a way back to the quality.

But for that to happen, the universities need turn their eyes to the essential (the training of students, technologically updated and correct, including pedagogically) and abdicate a bit of pseudo-marketing represented by university rankings.

The new generations are less manipulated and don't usually consult rankings (always biased in some way), after all, the information provided has been previously interpreted.

Who judges, opines or evaluates never does impartially, but according to his life bias, which includes their prejudices as well as the commitment to the current situation.

Nowadays social networks echo like no other medium the "longings seasoned with fears, paranoia and other questions" (Nada Além, Los Porongas).

(<http://www.losporongas.com.br/>).

To the extent that many European universities engaged in search of modernity and the students have a wide range of mobility, this can change the options of where perform the training - with greater or lesser technological integration, even as these customers well or poorly serviced share their reviews on the internet producing, depending on the case, or a free positive marketing or a destructor negative marketing.

Many potential students (domestic and international) of Ca' Foscari end up opting to study Informatics at Padova - than in Venice.

It would not be the time to create a highly competitive market advantage? A real appeal and irresistible which reversed this demand in a sustainable way?

The alternative to the current model can be in a back to the past (one step back in order to take two steps forward), not ignoring the technologies (that came to stay), but performing a rereading of good teaching practices (including medieval as the Socratic method), establishing connections and adapting them to needs and local realities.

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Factors In Design Of Assessment For Online Courses: Instructors' Reflections

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ABSTRACT

Assessment is acknowledged as a fundamental element in course design (Christen, 2003) and has great impact on teaching and learning (e.g., Anderson, Bauer & Speck, 2002). While much has been written on assessing students in traditional environments, there is a paucity of research on assessment of students in online environments (Reeves, 2000, 2002). This paper reports a study that investigated considerations and rationales that instructors had in design and use of assessment methods in online courses they taught. Twenty instructors teaching online courses at a large public university in the United States were interviewed on a one-on-one basis. Seven factors were identified from the instructors' reflections on their considerations and rationales behind the assessment methods they used, which included: (1) students, (2) motivation, (3) learning, (4) subject areas, (5) programs, (6) characteristics of the online delivery format, and (7) constraints. Each of the factors and their subcategories were reported. Implications of the findings and suggestions for further research were discussed.

Keywords: Online Assessment, Design Factors, Reflections, Consideration and Rationales

INTRODUCTION

Online education has made inroads into higher education in recent decades (Moore & Anderson, 2003). Allen and Seaman (2013) reported in their most recent survey results that "there were 572,000 more online students in fall 2011 than in fall 2010 for a new total of 6.7 million students taking at least one online course" (p.17). Online graduate courses and programs are especially attractive to adult learners since they can advance their education while staying with their families and maintaining their full-time jobs (Martinez, Liu, Watson, & Bichelmeyer, 2006). As the number of online courses and programs expands, concerns arise regarding their quality. One critical element for course and program quality assurance is the assessment used in individual courses for student learning (Anderson, 1998). What assessment methods instructors use usually indicates what they think is important for students to learn in the courses. Assessment also affects the depth of student learning, the learning strategies students take, and how they manage their study time (Brown, Bull, & Pendlebury, 1997). While much has been written on assessing students in traditional environments, there is a paucity of research studies on assessment of students in online environments (Reeves, 2000, 2002). This paper reports a study that examined considerations and rationales instructors had in design of assessment methods in the online courses they taught.

LITERATURE REVIEW

Assessment is well recognized to have great impact on teaching and learning (Anderson, Bauer & Speck, 2002; Bull & McKenna, 2004). Assessment is argued to be even more important in online environments (Rovai, 2000). According to Anderson (2004), most online students, who are busy adults with many family and work commitments, tend to be more practical and are less likely to participate in activities that are viewed as

supplemental to the course goals and assessment scheme. Morgan and O' Reilly (1999) point out that in face-to-face environments instructors have opportunities to go over the course materials with students, while in online environments, where students have more flexibility in deciding when and what course materials to read, "the instructor's efforts may be wasted unless assessment tasks are closely aligned and interwoven with study materials" (p.22).

Online environments are argued to bring advantages to instructors in assessing students. For instance, according to the Australian National Training Authority (ANTA) (2002), online environments can provide greater flexibility in where, when, and how assessment is taken. On the other hand, online environments pose challenges to instructors in assessment of online students. For example, in a fully online course, the instructor usually cannot see students physically, and he or she may never know for sure who is actually taking the course. This makes authentication and cheating issues more challenging to tackle in online courses (Christen, 2003; Rovai, 2000).

Much of the literature on online assessment (e.g., Oosterhof, Conrad, & Ely, 2007; Rovai, 2000) is anecdotal or opinion-based. Among the limited available empirical studies, many of them only examined the use of assessment in one course (e.g., Macdonald & Twining, 2002). While some studies investigated online assessment across courses, many of them focused on individual specific assessment tasks such as online discussions and participation.

Extremely few studies are available to explore why instructors choose certain assessment tasks in their courses. Empirical studies on assessment practices in online courses at the graduate education level are further scant. Considering the importance of assessment, the exponential growth of graduate programs and courses offered online, there is an urgent need to conduct studies on assessment in online environments at the graduate level. This study is an attempt to respond to this need.

METHODOLOGY

This study employed an exploratory, qualitative approach because of the following reasons. First, there is scant empirical research found on assessment methods used in online environments. If a topic needs to be explored but minimal research has been done on it, then it merits a qualitative approach (Creswell, 1998, 2003). Second, compared to quantitative methods, qualitative methods have the advantage in helping investigate a topic in depth (Patton, 1990). Finally, qualitative methods stress understanding a phenomenon from the participants' perspective (Kvale, 1996), and the focus of this study is to understand why online instructors choose certain assessment methods.

Participants

Purposefully sampling approach was employed in selection of participants. Participants were chosen from five different masters' programs offered by a large, public, research Midwestern university. These five masters' programs were: (1) Language Education, (2) Instructional Design and Technology (IDT), (3) Adult Education, (4) Nursing, and (5) Business Administration (MBA). The purpose of selecting participants from different programs was to explore assessment tasks used in a variety of disciplines. Choosing programs offered by one university was based on the consideration that the examined courses were offered in a similar context, and hence they could be reasonably compared and contrasted with each other.

Twenty instructors were purposely sampled from the five programs mainly based on the courses they taught and their willingness to participate in this study. All of them taught courses for the five programs. The courses they taught were core courses or major courses of the programs. Among them, nine of the participants were

male, and eleven were female. The detailed demographics of the participants and the status of the courses they taught are described in Table 1.

It is worth mentioning that similar to the methodology employed by Delandshere and Jones (1999), the focus of this study is not on the individual instructors, but on their reflections on the rationales and considerations underlying their practices. In other words, these instructors were not considered as separate cases; the information they provided constituted a collective case for understanding assessment tasks in online environments comprehensively.

(1) Data Collection and Analysis

The 20 instructors were interviewed on a one-on-one basis. Among the 20 interviews, depending on the interviewee’s availability and preferences, 13 were conducted FTF, five via phone, one via MSN chat, and one via email.

Prior to each interview, the syllabus and other available materials of the course(s) that the instructor taught were examined. Their courses were also observed if the author had access. Analyzing the syllabi and course materials, as well as observing the courses in advance, helped the author make the best use of the interviewing time and focus the interviews on collecting data that could not be collected from other means. Each interview was conducted in a semi-structured format.

Interviews conducted via phone and FTF were recorded by a digital recorder. The digital files of the recorded interviews were listened to on the computer numerous times. The interviews were transcribed, summarized, and analyzed by the researcher. The data were examined over and over again to see if the categories, explanations, and interpretations made sense and reflected actual practices.

Table 1: Summary of information on participants and data collection

	Program	Name	Gender	Status (as of time teaching the course(s))	Interview method
1	Adult Ed.	Fred	M	Full time faculty, tenured, Ed.D.	FTF
2	Adult Ed.	Jessie	F	Full time staff and alumna of the program	FTF
3	Adult. Ed.	Randy	M	Adjunct faculty, Full-time staff of a related program, Ed. D.	FTF
4	Adult Ed.	Hunter	M	Full time faculty, tenured, Ed.D.	Phone
5	Lang. Ed.	Jack	M	Doctoral student	FTF
6	Lang. Ed.	David	M	Doctoral candidate	FTF
7	Lang. Ed.	Shea	F	Just defended her dissertation	Synchronous text-based chat (MSN messenger)

8	Lang Ed	Xiang	F	Doctoral student	FTF
9	Lang Ed.	Lili	F	Just defended her dissertation	Email
10	IDT	Cathy	F	Adjunct faculty and alumna of the doctoral program, full-time staff of another program, Ph.D.	FTF
11	IDT	Brenda	F	Full-time faculty, tenured	FTF
12	IDT	Felix	M	Full-time faculty, tenured, Ph.D.	FTF
13	Nursing	Joan	F	Retired professor, former full-time faculty of the program, Ph.D.	Phone
14	Nursing	Sandy	F	Full-time faculty, tenured, Ph.D.	Phone
15	Nursing	Sharon	F	Full-time faculty, tenured, Ph.D.	Phone
16	Nursing	Rosy	F	Full-time faculty, tenured, Ph.D.	Phone
17	MBA	Leo	M	Full-time faculty, tenured, Ph.D.	FTF
18	MBA	Joyce	F	Full-time faculty, tenured, J.D.	FTF
19	MBA	Tyler	M	Full-time faculty, tenured, Ph.D.	FTF
20	MBA	Justin	M	Full-time faculty, Ph.D.	FTF

Validity

Descriptive validity and interpretive validity were emphasized in this study. Member checking was carried out throughout the study to ensure the validity. Additionally, peer debriefing was conducted in the data analysis and interpretation stages of this study. Finally, following suggestions given by Johnson (1997), low inference descriptions were used in reporting the study findings to help readers get close to the participants' actual language and personal meanings.

(2) RESULTS

Instructors' rationales and considerations underlying the assessment tasks they used were investigated. Seven large factors were identified, including: (1) students, (2) motivation, (3) learning, (4) subject areas, (5) programs, (6) characteristics of the online delivery format, and (7) constraints. These factors and their associated sub factors are detailed below.

1. Students

All of the instructors considered students when designing and using assessment tasks. The elements that they considered associated with students can be categorized in three groups: (1) students' general characteristics, (2) special characteristics of online students, and (3) students' feedback.

(1) Students' general characteristics.

Instructors mentioned that they considered students' entry levels, backgrounds, preferences, learning styles, as well as student progress and paces. These characteristics are named as general characteristics because they apply to students in other learning environments as well.

a. Entry level and background. Many instructors considered students' entry level and background when they designed the assessment tasks. For instance, Dr. Sharon lowered the difficulty level of one assessment task because she thought the original requirements were too advanced for some students. Similarly, Professor Brenda mentioned that she increased the difficulty level of some assessment tasks, because in the past there were some students who came to the course without ever using computer keyboard before, but this was not the case any longer with the prevalence of technology.

b. Preferences and learning styles. Many instructors provided students with options in their assessment. For instance, Dr. Sandy allowed students to choose different projects and different topics, to work in teams or alone, as well as to choose teammates whom they wanted to work with. According to her, different students might have different preferences, and providing options helped meet their different needs. Learning styles were not very often mentioned by instructors interviewed. Dr. Hunter and Ms. Jessie both included concept maps in their assessment tasks. According to them, the concept map assessment tasks made visual learners happy, although these tasks might be challenging for verbal learners. As Ms. Jessie further explained, she used a variety of ways to assess students and tried to cover as many bases as possible, so that every student could find some aspects from the course with which they felt comfortable. At the same time, everyone could also feel being pushed to do something out of their comfort zones.

c. Student progress and pace. Many instructors mentioned that students progressed at different paces when they reflected on the assessment tasks they used in their courses, and stated that they made their choices accordingly. For instance, as Dr. Joan from the Nursing program said, "I feel that people learn at different levels, learn at different rates." She further explained that this was also why she attempted to be as flexible as possible to students in terms of turning in assignments, and provided students with opportunities to redo their work.

d. Career. When designing assessment tasks, several instructors also considered the knowledge and skills students would need in their careers. For instance, Professor Brenda from the IDT program asked students to critique their peers' work (counting for 10% of their final grades) and to keep logs about the critique they received from their peers, as well as what changes they made to their projects based on the critique (10% of their final grades). According to her, how a student responded to feedback was a huge part for instructional design and production. The critique component was not just for learning design, but also to "add professional aspect," which students need to experience. Similarly, Dr. Sharon from the Nursing program stressed reflective thinking skills in her course, because she believed that these skills were very important for the nursing profession, especially nurse practitioners.

(2) Special characteristics of online students

Four characteristics of online students were identified: self-motivated, experienced, working, and busy, which are reported below.

a. Self-motivated. Many instructors, especially from the MBA and Adult Education programs, mentioned that online graduate students were self-motivated. As Dr. Randy from the Adult Education program commented, "These people are probably in their thirties, forties or even older.... Most of them come to the program after they do something else.... These students are very committed... They are not looking to get by easy. They do not ask "what is the minimal work I have to do [to pass this course]?" According to him, this was also why he did not

worry that students may set their objectives too low in the learning contract, one of the assessment tasks he used in his course. Instead, often they set their objectives too high. He would need to “remind them that this is only a semester long course.”

b. Experienced. Many instructors mentioned that in general online students tended to be more experienced than onsite students. Instructors considered this characteristic of experience in the design of their assessment tasks. For instance, Dr. Justin taught both residential and online MBA courses. In his online course, he asked students to share and discuss more about their experiences because students were more experienced, whereas he focused more on theory in his residential course. In his words, his online course “is more experiential.”

c. Working. Many instructors, especially from the MBA and IDT programs, considered that online students were working in their design and use of assessment task. Several instructors regarded this as an advantage and stated that this helped students apply what they learned courses more directly in practice. As Dr. Felix from the IDT program explained, “They [online students] are better students, not in the sense that they are smarter. They are on the job. They can apply what they learn directly in their work....They do not ask why I need to learn this.” Similarly, the last project Dr. Tyler asked students to do in his course was to conduct a partial audit of marketing performance in the company where the students worked. As he stated, he would not be able to use the same assessment task in a residential course because typical residential students studied full-time and they did not have a company to apply directly what they learned from the course.

d. Busy. Many instructors mentioned that online graduate students are busy because they work full time and many of them have their own families. Several instructors explained that this was partly why they broke down big assignments into smaller ones and used ongoing and continuous assessment tasks throughout the courses. Additionally, Dr. Joan from the Nursing program mentioned that this was also why she did not and could not make students participate too much in online discussions in her course.

(3) Students' feedback

Many instructors mentioned that they modified their assessment tasks based on students' feedback. For instance, according to Dr. Leo, one assessment task he used originally was to ask students to write two analysis reports. He replaced this task with four current event forum discussions mainly because students continuously told him that they liked the latter better. Students' feedback also was the basis for some instructors to continue to use certain tasks. For example, according to Dr. Randy, students were asked to participate in synchronous chats in his course. Although he personally felt that synchronous chats were awkward and not effective for student learning, he kept them because students said in the course evaluation that they liked them.

Although nearly all the instructors indicated that they valued students' feedback and took it into serious consideration. However, students' feedback did not always result in changes to the assessment tasks that they used. For instance, some instructors mentioned that they continued to use the same assessment tasks even though they were aware that students did not like the tasks. Two reasons were identified for why they did not make the changes. First, some instructors believed that the use of certain assessment tasks were necessary no matter whether students liked them or not. Another reason was related to practical factors. For instance, according to Dr. Rosy, some of her students reported in the course evaluation that they would like the course to be more focused. She could not make the change, although she wished, because she had 50 students who were from different majors.

2. Motivation

Many instructors mentioned motivation when they addressed the rationales and considerations they had for the assessment methods they used. Subcategories associated with motivation are described below.

(1) *Relevance.* Making their assessment tasks as relevant as possible to students was attempted by many instructors. For instance, according to Dr. Felix, allowing students to choose projects that they could directly use in their work made students more motivated. Similarly, Ms. Shea from the Language Education program commented, "I want actually for all assignments for the students to do something that will be useful in their teaching/practice/study.... Relevance is very important and motivating."

(2) *Interest.* Some instructors mentioned that they designed the assessments in a way to interest students. For instance, according to Dr. Fred, when he designed discussion forums in his course, he thought hard concerning how to make the discussions more meaningful and interesting to students. Similarly, Dr. Sandy mentioned that the assessment task used prior to the PowerPoint Presentation task was a large individual paper. One of her intentions for making the change was to make the task more interesting.

(3) *Confidence.* For instance, Dr. Leo replaced the assessment task of asking students to write an analysis paper with a new assessment task named "current event forums." The new task asked students to discuss recent articles and events chosen by the instructor. He made this decision because this task could help build up students' confidence by helping them to realize that they were able to analyze current events taking place as well as articles written by current economists.

(4) *Empowerment and encouragement.* Several instructors mentioned that they gave some weight to student asynchronous discussions in their final grades with a purpose to convey the importance of discussion to students and encourage them to participate. For instance, according to Mr. David and Ms. Shea who included interactive reflections in their assessment tasks, one purpose of using this assessment task was to give students encouragement, in addition to feedback, throughout the course.

(5) *Networking.* Some instructors mentioned that asking students to work in teams helped students to know each other and build networks. This was important for retaining their learning and sense of belonging, as well as for enhancing their professional careers. As Dr. Tyler explained, "The most important reason [for having teams in this course] is networking. I think it is important for them (i.e., students) to become aware of the skills and interests of other people in the class. I think that is important for their networking, for career, I think, it is important for retaining their sense of belonging, eventually towards alumni thing, and so on."

3. Learning

Learning is a major factor in the design of assessment tasks that all the instructors addressed. The following subcategories were identified from the data analysis.

(1) *Helping students master certain knowledge and skills.* All the instructors mentioned that one purpose of the assessment tasks they used was to help students to master certain knowledge and skills. Many of them mentioned higher order thinking skills. Self-directed and life-long learning skills were stressed by some instructors, especially from the Adult Education program. According to Dr. Hunter and Dr. Randy, one purpose of using a learning contract was to help students to build and improve self-directed and life-long learning skills. Some instructors, especially those who used closed book quizzes and exams, mentioned the necessity of memorizations and comprehension of some knowledge in the courses that they taught.

(2) *Helping students master various levels and aspects of knowledge and skills.* Some instructors mentioned that they used their assessment tasks to help students master different levels of knowledge and skills. For example, Professor Joyce referred to Bloom's taxonomy when designing the quizzes she used in her course.

According to Dr. Leo, among the four assessment tasks he used, two of them (quizzes and exams) were intended to test student understanding of the concepts covered in the quizzes and exams, whereas the other two tasks (team discussion forums and current event forums) were intended to help students to apply the concepts.

(3) Providing students with a variety of learning experiences. Several instructors mentioned that they used a variety of assessment tasks with a purpose of providing students with a variety of learning experiences. For instance, Dr. Sandy used different types of assessment tasks, such as field reports, critiques, taking inventories, PowerPoint Presentations, and online discussions. Similarly, Dr. Randy used at least five different types of tasks, including book critiques, interviewing practitioners, online discussions, designing activities for peers, and evaluating programs.

(4) Building learning community and increasing interaction. Many instructors mentioned that one intention that they had in the design of the assessment tasks was to help build a learning community and increase interactions between students. Several of them stated that this was also partly why they included student participation in asynchronous discussions in their assessment tasks. For instance, according to Dr. Sharon, there was a lot of participation in her course, which accounted for 30% of students' final grades. She asked students to not only post their work online but also provide feedback to their peers. She believed it was "an important part for online learning, to create a learning community online." She further explained the importance of learning community from her perspective, "it is important to learn from different perspectives....They can learn to approach things in different ways."

(5) Helping students to achieve better learning outcomes. Helping students to achieve better learning outcomes was mentioned by several instructors in reflection of the assessment tasks they used. For instance, according to Mr. Jack, one purpose he had in asking students to use a metaphor to describe language instruction was to help students to think deeper instead of just throwing in some points. Similarly, Dr. Cathy mentioned that she asked students to review and edit their peers' work because she believed this could help students to produce better learning outcomes (products). Additionally, quite a few instructors mentioned that they asked students to work in teams also because they believed this could help students learn better. For instance, as Dr. Rosy stated, "Students learn better when working with others, rather than just learn from books."

(6) Help instructors and students to see students' learning process. Some instructors mentioned that they used assessment tasks with a purpose to help them and students to see the learning process. For instance, according to Ms. Lili, in addition to helping students to achieve better learning outcomes, using portfolios could help her to understand "the process of learners." As she explained, from the portfolios students compiled, she was "able to see how they changed in their thinking and help them become competent educators." Similarly, Ms. Shea mentioned that she emphasized asynchronous discussions in her assessment tasks because it could help observe students' learning progress.

4. Subject areas

Several instructors mentioned the characteristics of subject areas they taught when they reflected on their rationales and consideration underlying the assessment tasks they used. For instance, according to Dr. Leo who taught an economics-related course for the MBA program, "In economics, the content is very specific, and it is very large... So in this course, we want them to learn some basic ideas in macroeconomics. But in addition to that, many of our assignments get them actually to apply it. They go beyond the basic ideas. They have to learn what is going on in specific countries. They have to find sort of numbers of analysis, very current, what is going on with the world right now." Similarly, Dr. Rosy mentioned that she used quizzes and exams, which mainly consisted of multiple-choice questions and short answer-questions concerning definitions, partly because in pharmacology, the subject area the course was about, there were best answers, right and wrong

answers, and right answers without good rationales. In contrast, Dr. Tyler commented that he did not include quizzes and exams in his marketing course because unlike accounting marketing basically was not “rule-based.”

5. Programs

In the design of assessment tasks, instructors not only considered factors at the course level, several of them mentioned factors concerning the program level as well. Factors related to program levels are detailed below.

(1) Course status in the program. Quite a few instructors mentioned the status of the course(s) they taught in the program. For instance, according to Professor Brenda, because the course she taught was a core course of the IDT program, the objectives of the course were reviewed and agreed on by all the full-time faculty members of the program. One major objective of the course was to ensure each student mastered the minimal levels of instructional design skills. This was partly why she asked students to complete their projects individually instead of working in teams. The status of the course(s) in the program also had an influence on the amount of assessment tasks that instructors gave to the students. For example, Dr. Leo used four assessment tasks in the course he taught for the online MBA program, but only used two tasks in the corresponding course for the residential MBA program. The reason was because the course he taught had a different status in the two programs. The course for online program is only about macroeconomics, but for residential program it includes both managerial and macro economics.

(2) Alignment with the program design. According to the instructors interviewed from the Nursing programs, the program was going to reorganize some of its core courses. In alignment with the changes to the program, they were planning to modify the assessment tasks they used in their courses as well. For example, Dr. Sharon mentioned that the resume assignment she used in the course would be moved to the gateway stage at the program level (i.e., before students enrolled in the program). Likewise, the portfolio assignment she used, in which she asked students to state their goals and collect supporting artifacts, would be moved to the program level as well.

(3) Consistent with the mission or philosophy of the program. The mission or philosophy of the program was another factor that instructors considered in their design or selection of assessment tasks. For example, according to Dr. Hunter and Dr. Randy who asked students to do learning contracts and to design activities for their peers, using these assessment tasks was consistent with the mission and philosophy of the Adult Education program, which was to help students become self-directed and life-long learners.

(4) Consistent with the current common assessment practice in the program. Some instructors implied that they used some assessment tasks partly because their colleagues used them. For example, Dr. Rosy mentioned that the case analysis task she used was common in nursing schools. Similarly, Dr. Tyler mentioned that while he allowed his residential students to choose their teammates, he did not give his online students such option, partly because assigning teammates became “not acceptable” in residential courses but was still accepted in online courses at the business school where he taught.

6. Characteristics of online delivery format

Many instructors mentioned they considered the characteristics of online course delivery in the design of the assessment tasks they used. Three fundamental characteristics of delivering courses online are identified and described as below.

(1) Instructors and students are physically separated. Some instructors mentioned that because they could not see students physically in online courses, their assessment tasks needed to reflect this accordingly. For instance, according to Ms. Lili, this was also partly why she required students to participate in online discussions. Additionally, because instructors and students were not in the same place, it was challenging for instructors to administer proctored quizzes and exams in online courses. Most of the instructors who included

quizzes and exams in their assessment tasks mentioned that they had no way of knowing what students brought with them when taking the quizzes and exams. Some of them showed great concerns regarding the possibility that students might collaborate with each other on the quizzes and exams that were supposed to be completed individually. Some strategies they used in this regard included only allowing each student to take each quiz and exam once, asking them to complete many test items in a limited time (e.g., 2-3 hours), making the quizzes and exams available for a limited time period (e.g., 3-5 days), and not providing correct answers until all the students submitted their answers.

(2) Students are physically separated from each other. Instructors from all the five programs mentioned that they had students who took courses from other states and from other countries. Dr. Felix and Ms. Xiang stated that this was partly why they did not ask students to work in teams. According to Ms. Lili who also did not ask students to work in teams, if the course was offered FTF she probably “will have students team up to work on projects, since they will be meeting each other FTF and develop more close relationships with each other. There is less issue with time zone differences as well.” It is worth mentioning that, as previously discussed, several other instructors asked students to work in teams. The advantages for students to work in teams, according to the instructors, included helping students to learn from each other, encouraging each other, achieving better learning outcomes, and developing professional networks.

Additionally, according to Dr. Cathy, because online students were not taking the course together physically, she had to modify the format of some assessment tasks that were used in FTF courses. For example, one assessment task she used was to ask students to rearrange a document (created verbatim from a real set of instructions) and make it more “user-friendly”. Students were not allowed to add words, but rearrange. She mentioned that in the residential format of the course, students were asked to complete this task with scissors and glue in groups. In the online version, since students could not physically sit together to complete it, she asked students to use Microsoft PowerPoint (or Word if they preferred).

(3) Students take courses asynchronously. Different from typical residential courses where students attend the same courses they are enrolled in at the same time, online students and instructors can log on in the course virtual space at any time asynchronously whenever convenient to them. Many participants mentioned this was advantageous for online instructors and students. Some of advantages they described included: Instructors and students had the flexibility of working on the course at any time. Every student had the equal opportunity to participate in the asynchronous discussions, instead of only a few students who spoke first as in a residential course. Instructors and students had more time to think about their responses, which helped make the discussions more thoughtful.

On the other hand, some instructors mentioned this could be disadvantageous. For instance, according to Dr. Randy, this could drag out the communications between the instructor and the students as well as among students. As he explained, “In an online setting, if I post a comment that you do not understand, you have to type a question back to me. It might be twenty-four hours later or longer before I respond to you. Then I might not understand your question. It takes the learning process and drags it out.” To compensate the disadvantageous side of asynchronous discussions, some instructors included synchronous discussions in their courses and counted it for students’ final grade. Additionally, some instructors adjusted the pace and depth of the assessment tasks. For example, Dr. Tyler mentioned that while he used three cases in the online course, he probably would use six or seven cases if the course was taught FTF. As he summarized, “here [in online courses] we have less breadth and repetition, but more in depth.”

7. Constraints

Some instructors mentioned constraints they had in reflecting on the assessment tasks they used. The major constraints they mentioned included class size, deadline to turn in the final grades, course length, and the amount of course credit hours.

(1) *Class size.* Constraints associated with class size were mentioned by many instructors, especially those from the Nursing and MBA programs. For instance, Dr. Rosy from the Nursing program stated that she did not give much weight to online discussions in students' final grades partly because it was difficult to grade the discussions among 50 students. Additionally, some instructors mentioned in addition to the other advantages of teamwork, they asked students to work in teams with the consideration of the class size. For instance, according to Dr. Tyler, "using teams can give us fewer papers to grade." As he explained, "We have teams, currently 32 teams. We have 32 team reports, not 150 individual reports."

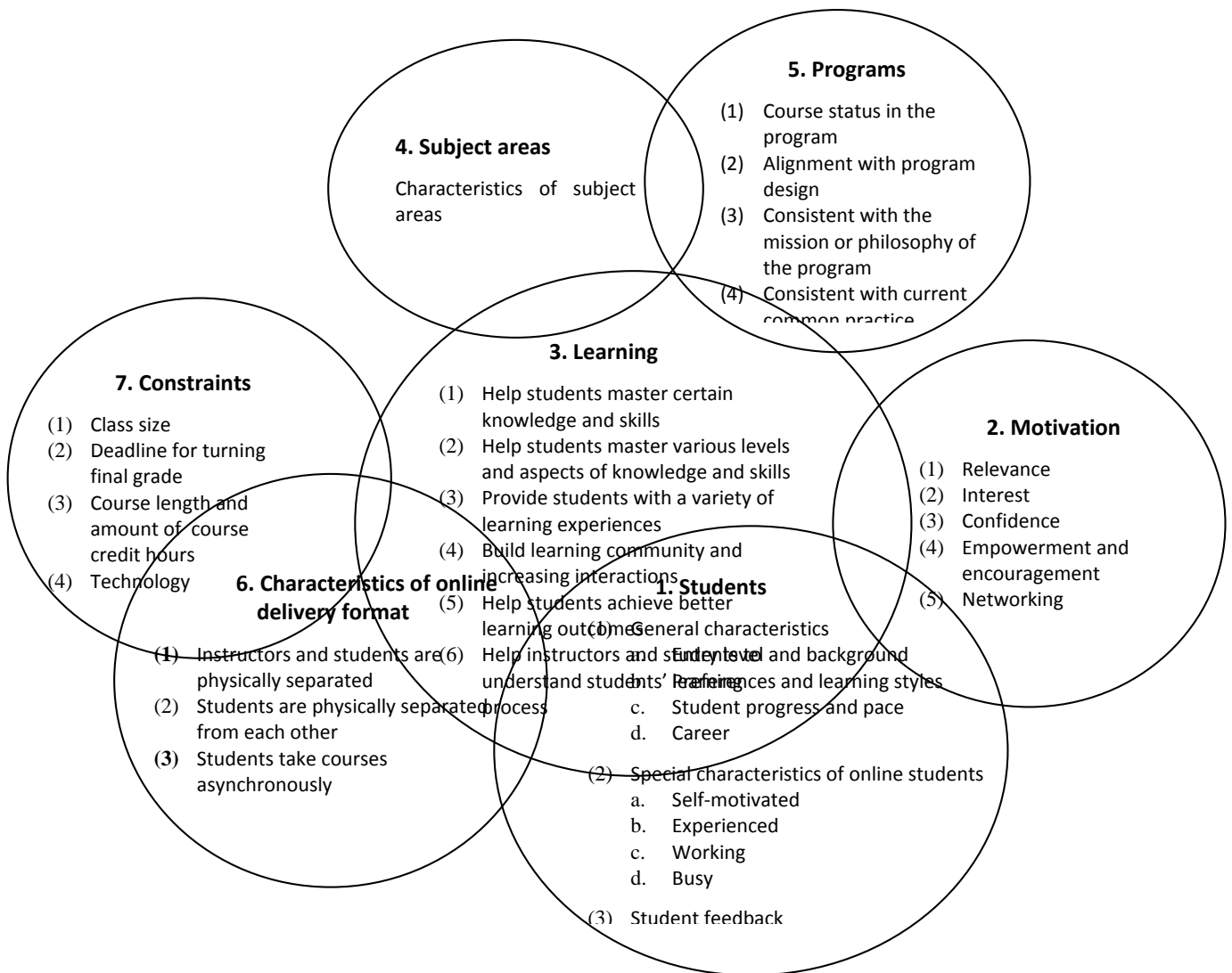
(2) *Deadline for turning in the final grades.* At the university studied, instructors were required to submit students' final grades three days following the last class meeting or final exam. Some instructors mentioned that meeting this deadline was another constraint that they had to consider in the design of the assessment tasks, especially the last one. For instance, Dr. Rosy mentioned that she used an exam instead of the original task asking students to write a structured essay at the end of the course because the exam was easy to grade in the limited time period. Similarly, Dr. Sandy stated that she asked students to do a PowerPoint presentation instead of a written paper for their final project also because it was easier to grade and meet the deadline for turning in the final grades.

(3) *Course length and amount of course credit hours.* The length of the course and the amount of credit hours awarded to students were also considered by the instructors in the design of their assessment tasks. For instance, Dr. Felix mentioned that he used fewer deliverables in his online course, because his online course was offered in the summer session which was shorter than the spring and fall semesters when the residential course was offered. Similarly, as discussed earlier, Dr. Joyce mentioned that she eliminated some assessment tasks because she found it was too much for students to do.

(4) *Technology.* Another factor that instructors mentioned involved technology. For instance, Dr. Sandy mentioned that she deleted quizzes from her assessment tasks because she and her co-teaching colleague had technical difficulty in uploading the quizzes and keeping them secure.

The identified seven factors and their subcategories are illustrated in Figure 1. As indicated in Figure 1, these seven factors are related to and intertwined with each other. The instructors usually did not consider individual factors in an isolated manner, but considered the factors comprehensively in making their decisions concerning assessment tasks. For example, as mentioned earlier, one assessment task that Dr. Sandy used was to ask students to do a PowerPoint Presentation for their final project. Several factors were found from the rationales that Dr. Sandy mentioned in making that decision. These factors included "motivation" (i.e., this could help make students be more interested in the task), "characteristics of the online delivery format" (i.e., compensating for the disadvantage of online environments where students are physically separated, and adding variety to the assessment tasks); and "constraints" (i.e., easier to grade and meet the deadlines of submitting students' final grades).

Figure 1 Summary and visualization of the seven design factors



DISCUSSION AND IMPLICATIONS

Seven major factors were identified from instructors' reflections on their design considerations underlying the assessment tasks. Among the seven factors, learning emerged as the key factor that was most frequently mentioned by the participants. As Joughin (2004) concisely summarized, "[t]he relationship between assessment and learning is complex, has been expressed in many ways, has been researched from a range of perspectives, and has generated an extensive literature" (p.1). While the relationship between assessment and learning is not the focus of this study, the findings of the study partly demonstrated the complexity of the relationship and implied that learning has become an axiom in the design of assessment.

Abundant literature (e.g., Garrison & Anderson, 2003; Moore & Anderson, 2003) suggests that one should take into consideration the special characteristics of the online delivery format in the design and teaching of online courses. All the instructors in the study seemed to be aware of this, although the degree of their preferences towards the online delivery format varied from each other. Some seemed to notice more the advantages and opportunities of teaching courses online, while others emphasized more the challenges and disadvantages.

Some factors identified in this study are found to exist in other contexts as well. For instance, class size was identified as one of the constraints for instructors in the selection and design of assessment tasks in online courses at the graduate level. Yates (2005) found that class size was also one constraint for online instructors teaching at the community college level. Additionally, this constraint was found to affect instructors teaching residential courses as well. For instance, Scott, Chovanec, and Young (1994) found that some professors teaching in traditional environments used multiple-choice exams because they did not have time to grade assessment tasks in other formats such as papers, even though they recognized the latter assessment tasks were more useful in fostering students' higher order thinking skills.

As not much literature has been found about the factors affecting the design of assessment methods, these findings are able to provide some general guidance for instructors and designers in practice and shed light on conducting similar studies in other contexts. However, this does not mean that there is not much difference across contexts in the design of assessment tasks. Rather, context is always important in the design and delivery of courses, including assessment tasks. For instance, it is likely that the factor "students" needs to be considered in design and teaching no matter what the learning environments and context are, although certainly specific characteristics of students in different contexts differ from each other.

Additionally, some factors affecting instructors in other contexts may not exist in the context of online graduate education. For instance, researchers studying assessment practices in K-12 contexts (e.g., Black & William, 1995) find that external mandate tests have a great effect on teachers in the selection and design of assessment tasks. Delandshere and Jones (1999) interviewed three elementary teachers from two schools. They identified a similar tension between mandate accountable testing and the call for change in pedagogy and curriculum. Such tension and dilemma seem not to exist in graduate education. As far as this study is concerned, most of the interviewed instructors indicated that they had much freedom in the design of the assessment tasks they used in their courses, and the grading of the work students submitted.

While these factors might not apply exactly to one's specific cases, they should still be able to help one, at least to get him or her started thinking of some issues in this regard. Appendix 1 summarizes the factors and the related subcategories identified in the study, lists issues that one may consider along with the factors, and provides some corresponding suggestions and tips. Finally, it is worth pointing out again that the identified factors are not isolated from each other, but instead are intertwined with each other. Instructors need to consider the factors in a heuristic and comprehensive manner.

LIMITATION AND FURTHER RESEARCH

As Fraenkel and Wallen (2003) point out, “generalizing is possible in qualitative research, but is of a different type than that found in quantitative studies. Most likely it will be done by interested practitioners” (p. 445). The generalization of this study is similar to other qualitative studies of this kind. Audience would need to be aware of these limitations when applying the findings of this study in their own cases.

Regarding further research, since limited research has been conducted on assessment in online environments, there are many topics that can be explored. For example, this study asked the instructors to reflect on the rationales they had underlying the assessment they used. These reflections were conducted after the assessment methods had been selected or designed. It would be interesting to interview instructors at the beginning and/or in the design process, and then comparing the results with the findings of this study. In addition, one could do a similar study by interviewing instructors teaching online courses at other graduate programs and/or in other disciplines, and then comparing the findings with this study.

Appendix 1: Factors, issues, and suggestions concerning the design and selection of assessment tasks

Factors		Sample issues to consider	Some suggestions and tips
Learning	Certain knowledge and skills	<ul style="list-style-type: none"> • What knowledge and skills do I want students to master and/or demonstrate from this assessment task? • Do the format and design of the assessment task help students to master and/or demonstrate the knowledge and skills that I intended? 	<ul style="list-style-type: none"> • Use assessment tasks that are likely to align with your purpose. For example, if your purpose is to help students to develop and/or demonstrate critical thinking skills, consider asking them to do critiques and avoid using quizzes and exams. • Selection of the appropriate type of assessment task is not equal to effective use of it. More attention needs to be given to how to design it.
	Levels and aspects of knowledge and skills	<ul style="list-style-type: none"> • What level is the knowledge and skills that I want students to master and demonstrate? (e.g., understanding concepts only? or as well as apply them?) • What aspects of knowledge do I want students to master and demonstrate? 	<ul style="list-style-type: none"> • Refer to Bloom’s taxonomy, the revised Bloom’s taxonomy by Anderson and Krathwohl (2001), or other resources addressing levels of knowledge and skills. • If students need to master different aspects of knowledge in the area, ensure your assessment tasks cover them as comprehensively as possible.
	Learning experience	<ul style="list-style-type: none"> • What learning experience do I want students to have from doing these assessment tasks? 	<ul style="list-style-type: none"> • If you would like students to have a variety of learning experiences, consider using a variety of assessment tasks, such as interviews with practitioners, online discussions, and group presentations.

	Learning community and interactions among students	<ul style="list-style-type: none"> • How important is the learning community and interactions to the course? 	<ul style="list-style-type: none"> • Keep in mind that learning community and interactions are a means to an end of learning, not the end itself. • Use strategies such as asking students to respond to each other in asynchronous discussion forums, or asking students to complete some activities and assessment tasks in teams. • To encourage deeper and more meaningful interactions, consider providing specific guidelines and exemplars.
	Learning outcomes	<ul style="list-style-type: none"> • How can I design the assessment tasks in a way to help students to achieve better learning outcomes? 	<ul style="list-style-type: none"> • The answer for this question will vary from task to task and course to course. For instance, for an essay task, provide some guidelines and list the issues you would like students to write on instead of just giving them a general topic.
	Learning process	<ul style="list-style-type: none"> • How can I observe students' learning process? • How important is the learning process compared to learning outcomes? 	<ul style="list-style-type: none"> • Assessment tasks such as asynchronous discussions and reflection papers are helpful for instructors to learn students' learning process. Of course, again, it will mainly rely on how you design the tasks. • Education literature suggests that the learning process is as important as, if not more important than, learning outcomes.
Subject areas	Characteristics of disciplines	<ul style="list-style-type: none"> • What characteristics of the subject areas do I need to consider in the design of the assessment tasks? 	<ul style="list-style-type: none"> • Design and use assessment tasks that are consistent with the needs and characteristics of the disciplines. For instance, if psychomotor skills are important in the discipline that the course addresses, performance-based tasks seem to be more appropriate than taking exams with multiple choice questions and writing research

			papers.
Students	General characteristics (e.g., entry levels and background, preferences and learning styles.)	<ul style="list-style-type: none"> • Are students' entry levels and background being considered in the assessment tasks? • Does the assessment task accommodate students' preferences and styles? 	<ul style="list-style-type: none"> • Consider using mastery quizzes (allowing students to take them multiple times) if the knowledge and skills are expected to be mastered by each student from the course. • Provide students with options in selecting assessment tasks.
	Special characteristics of online students (e.g., self-motivated, experienced, working, busy.),	How can the assessment tasks be designed in a way to suit online students' special characteristics?	<ul style="list-style-type: none"> • Use assessment tasks that help students to apply directly what they learn in their work (e.g., allowing students to choose issues relevant to their job). • Allow students to negotiate the goals they want to achieve from the assessment tasks.
	Student feedback	<ul style="list-style-type: none"> • How can I collect more feedback from more students? • What suggestions from students should I take? Can I provide compelling rationales if I cannot make the changes students suggest? 	<ul style="list-style-type: none"> • In addition to course evaluation, consider other means to collect students' feedback, such as asking students to provide suggestions openly in the online discussion forum near the end of the course, and/or some weeks after the course ends. • Make as many changes as possible based on students' suggestions, especially those raised by the majority of the class. • Consider other factors such as the constraints you have as well when considering students' feedback.
Motivation	Relevance, interest, confidence, encouragement	How can I motivate students to learn through the assessment tasks?	<ul style="list-style-type: none"> • Think of ways to make the assessment tasks relevant to students, more interesting, etc.

Online environments	Instructors and students are physically separated	<ul style="list-style-type: none"> • How could I design assessment tasks such as quizzes and exams in a way to suit the online format? • Should the quizzes and exams be closed book? How much time should I give students in taking the quizzes and exams? • How can I know whether students understand the course content since I cannot see their facial expressions at a distance? 	<ul style="list-style-type: none"> • Consider using assessment tasks that do not require the instructors' presence. • If you decide to use quizzes and exams, assume that some students will refer to books even if you tell them the exams are closed book. Design the quizzes and exams in a way to make it difficult for students to copy answers from books and relevant resources. • Use some small assessment tasks to ask students to show if and how much they understand the content, such as listing some questions for students to discuss in the discussions forums.
	Students are physically separated from each other	<ul style="list-style-type: none"> • Should I ask students to work in teams? • Is the format of the assessment task suitable for students to work together at distance? 	<ul style="list-style-type: none"> • Use of teamwork depends on the purposes of the courses, and what you would like students to learn from the tasks. For instance, if the purpose is to ensure students to master specific technology skills, then teamwork might not be necessary since students usually divide their work when working in teams. • The assessment tasks should not require students to meet physically.

	Students take courses asynchronously	<ul style="list-style-type: none"> • Should I set deadlines for students to complete certain tasks? • How much time should I give students before moving on to another discussion topic? 	<ul style="list-style-type: none"> • Having a deadline helps students to complete the work. However, be sure to remain flexible if some students may need more time for a variety of reasons. • There is no formula to calculate how much time should be given to students to complete a task. As far as asynchronous discussions are concerned, general guidelines are to give students more time than their counterparts in residential environments, (e.g., if one week is given to residential students, then offer two weeks for online students). • Some instructors find that residential students study at a faster pace, while online students study at a slower pace but with more depth.
Programs	Course status in the program; program design; common practice; mission or philosophy of the program	<ul style="list-style-type: none"> • How is the course that I teach related to other courses in the program? Is it required or elective? • How necessary is to maintain consistency with assessment practices of colleagues teaching in the program? • What is the mission of the program? • Do the assessment tasks that I use reflect the mission of the program? 	<ul style="list-style-type: none"> • Design your assessment tasks in alignment with the program design and the mission of the program. • Before designing the assessment tasks, clarify the status of the course in the program and the teaching and learning goals of the course from the program.
Constraints	Class size; deadlines for turning in final grade; course length, the amount	How can I handle these constraints while maintaining the quality of the course?	<ul style="list-style-type: none"> • Some instructors use teamwork to address the constraint of a large class size. But this should not be the only rationale you use for asking students to work in teams.

	of course credit; technology		<ul style="list-style-type: none"> • For assessment tasks that require more time to grade, ask students to complete them well in advance of the final week, making clear that they need not until close to the deadline to turn in tasks if they complete them early. • Give an appropriate amount of assessment tasks. Too many tasks can be just as counterproductive as too few tasks.
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Learning Styles Preferences Among Usm Distance Learners Via Videoconferencing Technology.

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ABSTRACT

This study aims to identify the most dominant learning styles of SDE-USM distance learners with the usage of videoconferencing technology. The theoretical foundation for this study is based on Grasha-Reichmann learning styles model such as independent, dependent, competitive, collaborative, avoidant and participative. 394 respondents answered the questionnaire distributed to them and collected data were analysed using descriptive statistics such as means, standard deviations. The SPSS software version 17 was utilised to analyse the data. This study showed that independent learning styles recorder higher mean value as compared to others learning styles. Researchers suggest that further studies should explore other learning style theories with other delivery methods as well as include a larger sample from different institutions.

Keywords: learning styles, adult education, adult learners, videoconferencing technology

INTRODUCTION

The concept of learning in distance learning (DL) and face-to-face learning differs from the aspect of usage of media as interface, interaction and so forth. DL gives freedom of choice other than the traditional conventional approach which gives opportunity to all in getting the same education (Fazilah et al., 2000). According to Nafisah (2000), the concept of DL is different from the concept of conventional education in that the student is separated physically from the lecturer. Aini (2000) defined the DL program as a delivery system connecting the student with the learning resources. The School of Distance Education, University Sains Malaysia (SDE-USM), previously known as the Centre for Off-Campus Studies was established in 1971. SDE-USM provides opportunities for working adults to obtain tertiary education. Information technology (IT) has opened a new information delivery platform in the teaching and learning process, especially for distance learning program. According to Wikipedia (2009), video conferencing technology uses telecommunications of audio and video that are able to connect people at different remote sites. With the usage of videoconferencing technology in the teaching and learning process, students have the opportunity to communicate with lecturers and other students, sharing information as well as being active participants in the videoconferencing session.

Videoconferencing technology also known as "USMVideoNet" had been introduced at SDE-USM since 1995 as one of the teaching and learning delivery mechanisms. The videoconferencing technology connects the USM main campus to other regional centers throughout Peninsular Malaysia. This technology uses international internet protocol of H.323, including the ability to integrate data and video with the TCP/IP network. Many literatures showed that there are many advantages of videoconferencing in educational institutions. According to Martin (2005), Rose et al. (2000), Townes-Young and Ewing (2005) and West (1999), videoconferencing technology minimizes the time and costs savings between remote locations, helps to fill in the gaps of teaching services besides improving access to learning.

The effectiveness of live videoconferencing as a teaching tool has been researched thoroughly. (Katz, 2002; Wheeler, 2002). Findings by Carville and Mitchell (2001) showed that students have developed learning strategies and skills with

the usage of videoconferencing technology. However, the technology capacity and constraint should be given attention as it would affect the students' learning process Belanger and Jordan (2000), Simpson (1991), Holden (1994), Yocom and Whitson (1995) stated that voice acceptance will be unclear at the different locations when the students speak slowly. Latchem and Rapley (1992) also found that during videoconferencing implementation, many problems occurred as seen from the quality of audio, screen and image. One-way communication can also occur if the student did not participate during the session. A study conducted by Shaffe (2000) found that students were more passive to interact during the videoconferencing session. The distances between the location of the campus or regional center are usually far apart. Distance, time and cost of travelling to attend the videoconferencing session may account for failure to attend the live videoconferencing.

Gardner (1993), Sadler (1996) as well as Allinson and Hayes (2000) stated that every student has different learning styles. Grasha (1996) has defined learning styles as personal qualities that influence the students' ability to obtain information, to interact with peers and the teacher as well as to participate in the teaching and learning process. Several models of learning styles have been developed to understand the individual learning styles in various scales, instruments and questionnaires. The most commonly models are the theory of multiple intelligences by Gardner (1993), the Felder-Silverman Learning Styles Model by Richard Felder and Linda Silverman (1988), the Myers-Briggs Type Indicator by Myers and McCaulley (1985), the Kolb Learning Styles Inventory by Kolb (1984), Gregorc's Style Delineator by Gregorc (1984), the Canfield Learning Styles Instrument by Canfield and Knight (1983), the Learning Style Model of Instruction by Dunn and Dunn (1978), the Grasha-Reichmann Student Learning Styles Scales by Anthony Grasha and Sheryl Hruska-Reichmann (1974) and many more.

All students have their own learning styles. Grasha and Yangerber-Hicks (2000) explained that learning styles are an individual's preference for how to learn. Some students are more independent than other learners, some may need guidance from the lecturers or peers, some students may tend to take responsibility for their learning while others may take little responsibility and reluctant to learn. Some students also may want to do better than their peers whereas others may enjoy working with other students. For instance, if a learner is an independent learner, it would make sense for them to choose streaming or recording videoconferencing as they can work alone and confident to learn on their own. If they are dependent learner, they need feedback and guidance from the lecturers or peers, so it would be suited to live videoconferencing that involves interaction with others. Students may prefer one delivery mode over another because of the differences in individual learning styles.

Students in SDE-USM are mainly composed of adult students. Adult students have their own careers, family responsibility and have years of experience. Huang (2002) stated that adult learners have different learning styles as compared to young learners. They bring years of experience and knowledge to any learning situation. Hence, it is expected that they would prefer different learning styles especially with the usage of technology in teaching and learning process. Learning styles in distance education environments were not frequently studied. Walker (2005) states that researcher particularly related on the learning environment in distance education is limited. David (2002) also states that there is a gap in the literature in comparing learning style with an individual's preference for the delivery mode. There are also few studies that analyse the effectiveness of videoconferencing from the student's perspective. Many studies have explored the learning style with the students' academic achievement (Gee, 1990; Halsne & Gatta, 2002; Buerk, Malmstrom, & Peppers, 2003; Garland, 2003; Rohana et. al., 2003; Downing & Chim, 2004; Liu, 2007; Manochehri & Young, 2006; Kamaruddin et.al., 2010, and few studies have conducted on how learning styles relate to the preferred mode of delivery. (Uschi, 2001; David, 2002; Kim & Susan, 2002). There are different aspects regarding of the effectiveness of different media of instruction. A study by Gee (1990) that used the Canfield

Learning Styles Inventory (CSLI), found that distance learners preferred an independent learning environment, whereas on-campus students preferred collaborative work in a live teleconference distance education class.

Research done by Wong (2006) using the Grasha-Riechmann learning style scale in identifying the preferred learning style of students at Open University Malaysia (OUM) through the use of video conferencing technology found that the independent learning style was the most common learning style used by students undertaking programs at OUM. Findings by Diaz and Cartnal (1999) who studied learning styles among on-campus students and distance learning program students based on the Grasha-Reichmann learning style scale show that those in distance learning programs were more likely to have an independent learning style whereas the on-campus students were more inclined to practice the dependent and collaborative learning styles. However, the findings of Ahmad and Suaini (2010) who studied learning styles of Bachelor of Education degree part time students in Universiti Teknologi Malaysia (UTM) using the Grasha-Riechmann learning style scale found that collaborative and competitive learning styles were the dominant learning styles among the students. Further, the study by Kumar et al. (2004) involving 65 students at Midwestern University found that students preferred the participant, collaborative and dependent learning styles. Hamidah et al., (2009) in their study involving several educational institutions in the north of Malaysia found that female learners were more inclined toward the collaborative, participant, dependent and competitive learning styles. Based on the academic programs namely science and arts, the findings showed that there was a significant difference between learning styles and the academic program aspect.

This study attempts to fill the gap in adult student learning styles research by investigating the impact of information technology, which it is a videoconferencing technology on learning styles of distance learners. Thus, the main objective of this study is to investigate the most dominant learning styles of adult students' in SDE-USM based on Grasha-Reichmann learning styles model such as independent, dependent, competitive, collaborative, avoidant and participative.

Methodology

Procedure

This study is a descriptive study on the learning styles of adult students in SDE-USM. Descriptive research is suitable for use in research that aimed at describing a scenario that is happening in the population. This study focus on the videoconferencing technology as it is one of the educational tools for the teaching and learning process in SDE-USM and the best tool that has been recognised in Malaysia (Md Noor, 2001). The theoretical foundation for this study is based on Grasha-Reichmann learning styles model such as independent, dependent, competitive, collaborative, avoidant and participative. The "independent learners" prefer to work alone, do not rely on their lecturers to give direction on their studies and they are very confident learning on their own. The "dependent learners" typically need guidance and feedback from the lecturers or their peers. They prefer to have detailed instructions on how to complete assignments and to have someone to tell them what to do for their learning. The "avoidant learners" tend to take little responsibility and are reluctant to learn. Generally, they do not enjoy learning, tend to feel it is unnecessary to compete with other students to get a good grade, have a high absenteeism and are also poorly organized in their work. On the other hand, the "participative learners" are eager to take responsibility for their learning, interact well with their peers and are highly motivated. The "competitive learners" are described as those who want to do better than their peers. They feel like it is necessary to compete with other students for the lecturers' attention and being the best students are the goals of competitive learners. The "collaborative learners" prefer to work and learn through sharing and cooperating with the lecturers and their peers as well as enjoy working with other students on classroom activities and discussion.

All respondents in this study were off-campus undergraduate students enrolled in a Bachelors degree program. The population for this study consisted of students enrolled in SDE-USM for courses such as Management, Social Sciences, Humanities and Sciences. Researchers used stratified random sampling to ensure that the subjects are truly represents the population in SDE-USM and 394 students were selected as the subjects.

Data collection

Source information used in this study consisted of primary and secondary data. Primary data were obtained through the use of a questionnaire. The secondary data were obtained by reviewing reference books, journals, theses, and internet online sources. The instrument used in this study is the Grasha-Reichmann Student Learning Styles Scale (GRSLSS). The GRSLSS is an instrument focusing on the interaction and instructional preferences of participants. This scale is suitable for high school, college or university students in order to determine students' learning styles when interacting with lecturers and peers. The scale is one of the key that differentiating element of a distance class as it focuses on the lack of social interaction between lecturers and peers. This scale is also relevant to use in a distance education setting. By using this scale, an instructor may optimize the teaching and learning environment for all students and design courses based on students' learning styles.

Data analysis

Descriptive analysis such as means and standard deviations has been used to analyse the data. Mean was used to obtain the central tendency for the investigated group and standard deviation was used to determine the distribution of scores within the group. The data was then analysed using statistical analysis of SPSS software version 17.0.

Findings and Discussion

To determine the most dominant learning styles with the usage of videoconferencing technology.

To examine the most dominant learning styles among adult students' in SDE-USM, descriptive analysis such as mean and standard deviations were used to find the research findings. Referring to the mean score tabulated in Table 1, the total of mean score for each item is more than 2.50 and standard deviation is between 0.5 - 1.00. The findings found that overall, students emphasize more on the independent learning styles 2.75 (0.87), followed by avoidant 2.70 (0.82), competitive 2.56 (0.79), dependent 2.40 (0.72), participative 2.19 (0.69) and less emphasize on the collaborative learning styles 2.01 (0.61).

The results showed that independent learning styles recorder higher mean value as compared to others learning styles. This result suggests that most of the adult students' in SDE-USM are independent students with the usage of videoconferencing technology in their learning process. The students' experience as an adult has allowed them to be independent and take greater responsibility on their own learning process. With the usage of videoconferencing technology, adult students' in SDE-USM are more independent for pursuing their own learning goals and needs. This finding is supported by a research done by Gee (1990) that using the Canfield learning styles inventory, states that the students in the distance education course had the highest scores for the independent learning style whereas the on-campus students with the highest mean score were the collaborative students. According to Grasha (1996), students who have independent characteristic prefer to finish their task by themselves and receive less direction from their lecturers. Johnson and Johnson (1999) stated that students who are independent usually have their own study materials, work at their own pace and strive not to disturb other students. They also have their own objectives to

achieve, have deep interest, regard their success as dependent on their own ability and also regard their success and failure as unrelated to others.

The second learning style practiced by the DL students at SDE-USM is the avoidant learning style. The students who adopted this learning style were more inclined to not attend lectures, were weak in managing tasks given and avoided establishing more productive goals. Nevertheless, the researcher opines that students with avoidant learning style are more responsible over their learning and they have the ability to avoid having any pressure especially related to their learning. According to Grasha (1996), students who had the avoidant learning style had the tendency to achieve low academic achievement and usually had the highest absenteeism in lecture attendance. They also were found to be weak in managing tasks, were less responsible in their learning, avoided participating in any activity in the classroom, lacking in enthusiasm for their chosen course and did not like to face tests and examinations because they usually barely made the passing grade. Tajul (1989) also agreed that those with avoidant learning style are not confident of passing with excellence in a subject being learned, are not interested in the learning being followed, lack peers with whom to discuss, and are unready to discuss with other students. However, students who favor the avoidant learning style were found to have ability to avoid any stress or anxiety throughout their T&L process. They also have time to indulge in other activities besides studying. This will give a negative effect in their learning outcomes such as a less than productive learning process and prevent them from setting more productive and clear targets.

Further, the competitive learning style is the third most favored by the students of SDE-USM. Students were found to compete among themselves for rewards and recognition in the T&L process. In fact, mistrust emerged among the students in the same group. The students who adopt a competitive learning style can motivate themselves in maintaining their performance and set their own targets in learning. Nevertheless the students who love to compete found it hard to learn techniques and skills for collaborating with other students. According to Grasha (1996), students who are competitive in nature will compete among themselves for rewards and recognition. In fact, distrust may crop up even among the same group members. They were always eager to show their prowess such as completing tasks in a better way than others. Besides that, they were always keen to know the achievement level of others in tests or assignments. Learners who employ the competitive style can motivate other learners to maintain their performance in directing the target for the learning being followed. Besides that, they can carry out actions better than other students can, when following the lectures. They will always interact with the lecturer and other students by asking questions in the lecture theatre and constantly seek praise or appreciation related to activities in the lecture theatre. However, the students who like to compete find it difficult to appreciate other students and do not learn enough about practicing collaboration techniques and skills for interacting with other students.

The fourth learning style is the dependent learning style whereby the students tend to be disappointed or discouraged if faced with challenges in the T&L process. This is because they are very dependent on the lecturer to give them instruction to complete a task and always require clear instruction from the lecturer. Indeed, these dependent learners will find it hard to develop self efficacy skills in their learning. Grasha (1996) suggested that the dependent students will feel disappointed when faced with challenges in their learning. This is because of their high dependence on their lecturers since they expect clear instructions in completing any task. In fact they need guidance from their lecturers, and must be told what needs to be learned especially when facing examinations. The lecturer and other students are their sources of reference. Besides that, they also rely only on the prepared learning materials and do not take the initiative to seek out other additional information related to their lessons. The students who adopt a dependent learning style are seen as students who find it difficult to develop self-efficacy in their learning. They do not like to learn how to overcome a certain problem that is unclear. This is because they always need guidance from the lecturer where they regard the lecturer as one who should help them in managing their anxiety and giving clearer

instructions. These students also often meet with their lecturers and other students to obtain information considering that they need notes from the lecturers to learn the material being taught. They also prefer the student-centered T&L process.

Next, the participant learning style was the fifth preferred learning style practiced by students in the SDE-USM program. Those who employ this learning style are more responsible over their own learning and have good relationship with other students. These students will complete all assigned tasks with a positive attitude, are active in all lecture room activities and obtain valuable and useful experience in every lesson they follow. Nevertheless, these students often do a learning task by placing too much importance on the needs of others rather than their own needs. The findings of this study show that students in the SDE-USM are less involved when following the DL program with the use of video conferencing technology as the interface in the T&L process. Those students who prefer participant learning style usually like to engage in activities in the lecture hall, love to attend lectures and are responsible for their own learning. Grasha (1996) stated that such learners often have good relationship with other learners. Besides that, they always complete their assignments and always have a positive attitude. They regard lecture room activities as very valuable, useful and attract their attention to follow the lessons. They also are active students in classroom activities. This group of students also consider that they will gain experience in every lesson followed when they go for lectures. However, the students in this group were found to always place others' needs in excess of their own needs. This means that they will put others' needs and requirements ahead of their own.

According to Laurillard (2000) and Smyth (2005), use of video conferencing technology can enable students to collaborate in the T&L process to get in-depth explanation. Apart from use of videoconferencing technology in the T&L process, students need to be independent at certain times in order to obtain additional information. Nevertheless, this study found that the collaborative learning style was the least applied learning style by the students of SDE-USM. Among the characteristics of students with the collaborative learning style are that they enjoy sharing ideas when learning in groups. Barker (2002) noted that the use of technology in adult education must allow learners to interact with one another, support learners in obtaining more effective information, help resolve learning problems and allow student collaboration. Askov and Simpson (2001) also agreed that technology use must encourage adult learners to collaborate among themselves. However, the students in this group were found to depend too much on others and lacked the ability to do their tasks by themselves. The students were lacking in collaborativeness perhaps because they had limited interaction with the lecturers and other students considering that all of them were busy with their own daily responsibilities. The researcher is also of the opinion that considering the limited one hour time for the video conference session, students do not have the opportunity to carry out collaborative discussion using the video session mode in their learning process.

Table 1: Means and standard deviations of adult students' learning styles.

Learning Styles	Mean (SD)
Independent	2.75 (0.87)
Avoidant	2.70 (0.82)
Competitive	2.56 (0.79)
Dependent	2.40 (0.72)

Participative	2.19 (0.69)
Collaborative	2.01 (0.61)

SD – Standard Deviations

4. Conclusion

Technology can be used as a valuable tool to promote and strengthen certain learning styles with specific mode of delivery. For instance, if the lecturer requires the students to interact during the session, it may strengthen the students' participant in the classroom, minimize those who are avoidant learners and provides opportunity for the competitive learners to do better than their peers. The students may naturally choose the most productive learning styles for their learning process. What important is that videoconferencing delivery modes provide an option for the students to use effectively for their learning process.

This study found that the most dominant learning style adopted by students in SDE-USM is the independent learning style. As adult learners following distance learning, the students have the freedom to learn on their own, are independent at certain times and take responsibility over their own learning. According to Karsono (1993), students have to be independent and learn on their own while the institution offering DL programs can play its role by preparing help in the form of academic facilities and other support services. This shows that for the effectiveness of a T&L process the independence factor is important for the student to be more motivated in the T&L process through videoconferencing technology.

Researchers also suggested that students should take their own initiative to work in a group, sharing ideas as well as initiate discussion in order to avoid feeling isolated and unmotivated when they sign up for distance education programs. To strengthen the students' learning styles, the researchers suggest that the lecturers have to be more productive to interact with their students and discuss the learning material during the live videoconferencing session. Lecturers may also require the students to give group assignments that may help to strengthen the students' participative and collaborative learning. The researchers also suggest that further research should explore the different types of learning styles with other delivery modes, utilize other learning style theories and models as well as do a comparative study on the learning style differences between students in the distance education program and on-campus students.

Acknowledgements

Financial support for this study was provided from the Ministry of Higher Education, Malaysia.

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Virtual School Leadership: Professional Development Using Digital Technologies in Canada and Haiti

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ABSTRACT

The rapid growth of digital (e-)learning and mobile (m-)learning has created the potential for people to access learning opportunities throughout the world. Although there has been significant research on e- and m-learning (e.g. Valk, Rashid, & Elder, 2010), there has been much less attention given to how school leaders can access these resources for their own professional learning, particularly in the developing world. This study provides an examination of how digital technologies can facilitate learning and professional development of school leaders in Haiti and in other fragile states. The key research question at the center of the study is: How can digital technologies facilitate learning that occurs in a professional learning network built to support educational leadership capacity-building in Haiti? Three key themes developed from the research study: Collaboration, authentic and real-time problem-solving, and engagement. These themes are discussed in relationship to literature that argues for a new understanding of globalization for school leaders (Brooks & Normore, 2010). In the conclusion, the challenges and opportunities of accessing e-learning to support educational leadership capacity-building across borders are discussed.

Keywords:

INTRODUCTION

School leaders in the developing world often experience significant challenges in engaging in professional development (Kitavi & Van Der Westhuizen, 1997). In a country such as Haiti, these challenges can prevent school principals from developing the types of skills and abilities that will improve their schools (Lockheed & Levin, 2012). Economic barriers may restrict the financial ability of school principals to pay for professional development courses. Geography can also be an obstacle in preventing principals from marginalized areas in traveling to cities to take part in professional learning sessions. Principals in Haiti want to develop school leadership abilities but these challenges, as well as socio-political ones, can prevent this from occurring (Sider, 2014).

One potential solution to some of the challenges of providing professional development in contexts such as Haiti has been to consider alternative means of delivering professional development. Instead of expecting school leaders from across a region to travel to a central meeting area, there has been an increase over the past 20 years in professional development activities and learning opportunities that utilize distance education, particularly mobile (m-)learning (Valk, Rashid, & Elder, 2010). The development of cellphone, smartphone, and web-based applications has supported these opportunities (Allen, 2011). At the same time, the increasing use and familiarity of digital devices by the general population in many parts of the developing world has facilitated the ability to use m-learning as a means to support education and professional development (Foss, 2010).

A pilot project developed in 2011 by a Canadian university and school partners in Haiti, using digital technologies to support educational leadership capacity-building, is the focus of this study. The Digital Mentoring Project (DMP) involved two Canadian and eight Haitian school leaders over a three year period with the goal of connecting the participants in a digital professional learning community. The DMP was created to examine how school principals could engage in distance learning, using digital technologies, in which they would share resources and collaborate beyond their own contexts. The participants used digital technologies such as smartphones and tablet computers to enter into the discussions and resource-sharing opportunities. This paper presents an opportunity to

consider the research question that guided the study: How can digital technologies facilitate learning that occurs in a professional learning network built to support educational leadership capacity-building in Haiti?

Literature Review

School Leadership in Haiti

As in other parts of the developing world, there are many challenges to being a school principal in Haiti. Haiti is the poorest country in the western hemisphere and one of the poorest in the world (World Bank, 2011). Half of the population lives in absolute poverty of \$1/day and 78% survive on less than \$2/day (World Bank, 2011). Further, the educational context of Haiti presents many challenges to school leaders. Approximately 77% of children attend primary schools and only 20% attend secondary schools (UNICEF, 2011). The goal of Universal Primary Education of providing free education for all children in the primary years is rapidly being realized but with a wide variety of school experience and quality (Samy & Carment, 2011).

School principals in Haiti also experience other challenges. One of the most significant challenges is financial. Most school principals rely on tuition monies as the source of school income since 85% of schools in Haiti are private (MENFP, 2011). Not having consistent income from parent fees can make it difficult for principals to budget for activities such as professional development. As well, most teachers in Haiti have limited formal teacher training (Sider, 2009). This, combined with the minimal oversight that the Ministry of National Education provides to schools means that school principals often have to rely on developing their own curriculum, often with limited training themselves on how to do so (Sider, 2014). These problems can be exasperated due to the limited training which a principal may have. Further, there is no national professional association of school principals in Haiti and very little scholarly research that is grounded in the Haitian context. Thus, principals do not normally have a support system in place to help shape their decisions or to facilitate the development of resources.

The January 12, 2010 earthquake devastated an already weak educational system. Nearly 5,000 primary and secondary schools were destroyed or badly damaged and approximately 38,000 students were killed, as were 1,300 teachers (Leeder, 2010). Although many non-governmental and international governmental organizations have worked toward rebuilding the educational system, much of the focus has been on building schools. There continues to be very limited attention to developing the skills of school leaders, a requisite for developing effective schools (Birkeland & Feiman-Nemser, 2012; Leithwood & Jantzi, 2008; Leithwood & Riehl, 2003). It is against this backdrop that we consider how distance education and m-learning can support the development of school principals who will be equipped to move Haiti forward.

Distance and m-learning to Support School Leadership

There has been a rapid transformation in education over the past twenty years with a global movement to move beyond traditional education (Collins & Halverson, 2009). Collins and Halverson (2009) suggest three areas of potential gain in this new era of transformation: customization, interaction, and control. Customization refers to the ability to alter curriculum and teaching methods to meet the diverse needs of students. Technology can also contribute to heightened interaction between students and their learning environments through tools such as assistive devices (Sider & Maich, 2014). As well, control of the curriculum, at the individual class level and at a macro system level is enabled through technology. Technology can support standardized report cards, sharing of curriculum resources, and a better sense of students' responses to interventions. The shift of moving away from traditional education involves not only changes to the tools of teaching and learning but a shift in the ways in which teaching and learning occur (Beetham & Sharpe, 2013).

A key theory of mobile learning that frames this paper is articulated by Sharples, Taylor, and Vavoula (2007) as "the processes of coming to know through conversations across multiple contexts amongst people and personal interactive technologies" (p. 225). This theoretical stance suggests that learning does not take place solely within static locations, such as classrooms and schools, and only in fixed periods of time. Instead, Sharples, Taylor, and Vavoula (2007) examine how learning takes place across locations, time, topics and technologies. Thus, a key aspect to learning in the digital world involves exploration, conversation, and collaborative knowledge building (Beetham & Sharpe, 2013). This theory builds on Stahl's (2003) work that technology supports the type of distributed communication that helps support learning and knowledge-building.

The growth of distance education in the developing world has been facilitated by the use of new technologies such as smartphones, tablet computers, and laptops (Heeks, 2008). Gholami, Higon, Hanafizadeh, and Emrouznejad (2010) argue that digital technologies have a greater effect on lesser developed countries than higher developed countries. For example, the use of mobile technology has supported the professional learning of health care workers

in providing distance education and professional support in the developing world (Foss, 2010). Further, mobile devices such as smartphones are cheaper, more durable, more portable, less reliant on a steady source of electricity, and can access the Internet through cellphone systems (Allen, 2011). There is also a recognition of the pervasiveness of mobile technology in the developing world. For example, less than 0.5 percent of African communities have a computer-based Internet link whereas more than half the African population has access to mobile devices (Heeks, 2008, p. 28). Similarly, in Haiti over 60% of the population has a cellphone (Communications: Haiti, 2014).

Distance learning, particularly that which uses mobile technology such as smartphones, can decrease social exclusion and support a more inclusive form of school leadership professional development (Chigona, Vally, Beukes, & Tanner, 2009). As well, smartphones have the potential to provide a digital link to a global learning community (Allen, 2011). Chigona et al. (2009) found that the expense of purchasing phones and phone plans is still a barrier in the developing world. Further research has suggested that the barriers to the use of new digital technologies in the developing world are still significant (Motlik, 2008). These barriers can include accessibility, cost, language interfaces of phones, and limited opportunities for training to effectively use mobile devices (King & Mbogho, 2009). As the price of phones decreases, increased attention has to be given to reverse the limited knowledge about how smartphones can support resource sharing and development (Chigona et al., 2009).

Within this transformative age of technologically-enhanced learning, school leaders need a new set of skills and dispositions to encourage and support learning contexts. Brooks and Normore (2010) suggest nine literacies that school principals need to be prepared for in the 21st century. These literacies are: political, economic, cultural, moral, pedagogical, information, organisation, religious, and temporal. Amongst this list, two are of particular importance to leading in the age of technologically enhanced education: pedagogical and instructional leadership. Brooks and Normore (2010) suggest that school leaders need to be aware of pedagogical changes as a result of the question, "How is effective instruction conducted to students with diverse backgrounds and how do students learn about and use multiple literacies in the complex, dynamic and interactive environment of the home, the classroom, and beyond?" (p. 63).

Further, Brooks and Normore (2010) argue that, "... information literacy has become more critical than ever as discourses about the knowledge economy focus on the necessity of educating ALL students with skills for the global workplace" (p. 64). They assert that, "Information literacy aims to develop *both* critical understanding *and* active participation." (Brooks & Normore, 2010, p. 64, emphasis in original). Brooks and Normore (2010) indicate that awareness and knowledge of these literacies is not enough; leaders must utilize them to be more effective in their leadership practices. This paper then considers how school leaders can access new technologies to support these emerging leadership dispositions particularly in a developing world context such as Haiti.

Methodology

The key research question that this study examines is: How can digital technologies facilitate learning that occurs in a professional learning network built to support educational leadership capacity-building in Haiti? This question is examined by using data from a qualitative research study that involved ten participants in a Digital Mentoring Project (DMP). The DMP utilized smartphones and tablet computers to connect eight school principals in Haiti with two school leaders in Canada over a three year period (2011-2013). The goal of the DMP was to connect all of the participants in a professional learning community (DuFour & Eaker, 1998) and to engage them in real-life and real-time problem-solving and resource-sharing of relevance to their contexts.

The eight Haitian participants represented diverse geographical regions of Haiti and varying positions of leadership: four principals from private and public schools, a Ministry of Education official, a curriculum developer for a non-governmental organization (NGO), a private school superintendent, and a business administrator for a school system. The two Canadian participants were both school principals from central Canada. The Haitian participants were selected purposefully using a chain sampling method (Isaac & Michael, 1997) where school leaders were asked to identify key educational leaders whom they respected. All of the participants were provided with BlackBerry smartphones or tablets to facilitate their participation in the professional learning community. The discussions and resource-sharing opportunities were not structured according to externally-created timelines or topics. Instead, the participants engaged in the project when presented with a school-based challenge or when contacted by another participant.

A qualitative research methodology formed the basis for the study with two primary methods of investigation. First, the digital records of the participants as they engaged in the DMP were examined. This included the various methods the participants used to communicate with each other including email, text messages, Skype conversations, and BlackBerry Messenger records. Second, participants were interviewed and asked to reflect on the experience of

using digital technology to support their professional learning. The analysis of the data occurred on an ongoing basis to guide further data collection. Using constant-comparative procedures (Glaser & Strauss, 1967), transcriptions and transmissions from each data collection point were analyzed to find recurring patterns. This paper reports on three key themes which emerged from the research framework: Collaboration, real-time problem-solving, and engagement.

Results

Collaboration

The participants were eager to engage in on-line discussions around topics of importance to their leadership development. Some of the participants were much more active than others in the Digital Mentoring Project (DMP). Three participants (two Haitian, one Canadian) had conversations frequently, usually on a daily or weekly basis. These regular conversations provided insight into, not only into the types of leadership challenges they were experiencing, but how they used the distance learning framework to leverage their leadership abilities. Other participants (four Haitian, one Canadian) engaged on-line every few weeks and usually in reference to a major incident or question they were experiencing. Two of the Haitian participants were initially slow to enter the online learning environment but became more active as others encouraged their participation and as they became more familiar with the tools that were being used.

The participants self-reported that there were a number of reasons they participated to the degree they did. For those who collaborated regularly, they indicated that they were comfortable with using the technology and found it easy to quickly contact another member of the DMP to pose a question or engage in a conversation. As one participant stated, "I have been using a cellphone for two years but to be able to use a smartphone really helped me have more access to the others and to resources on the Internet." Those who were not as regularly involved indicated that the reasons for this were two-fold: First, they indicated that, due to their busy schedules, it was difficult to find time to engage in the learning community, and second, they were hampered by their comfort level with the technology. One participant stated, "It's incredible how much technology is available in Haiti. You would think that we are a poor country but everywhere there are cellphone towers and I have reliable Internet access anywhere in my community. I am just becoming comfortable with this!" It is interesting to note that at the end of the second year of the DMP, one of these latter two participants was using his smartphone to regularly instant message and email others. When asked about this, he indicated that it had taken a long time to overcome his fear of the technology but that he was now using the technology on a frequent basis. He stated, "I cannot believe how much I use my smartphone now. I can [instant] message other principals, I can download resources for my teachers ... I am using it to communicate with parents."

The digital technologies that the participants used to connect with each other provided an opportunity to collaborate on projects and resource-development. One example of this collaborative planning was in the development of a series of workshops that the participants decided would be beneficial for other principals in Haiti. The participant who was a system leader for the Ministry of National Education started the conversation by asking his peers if they had an interest in collaborating to host and deliver a professional development conference for teachers. The other participants provided input into the idea, including suggestions for workshop topics and leaders.

The concept culminated in a conference for teachers in northern Haiti to help support their abilities in areas such as teaching mathematics and special education. The collaboration of the participants was facilitated by the digital professional learning community. The system leader who initiated the idea stated, "It is rare for leaders to collaborate in Haiti. We simply have not had the system supports to facilitate collaboration. This opportunity [to collaborate through the DMP] provided the structure we needed to plan and carry out this conference." The participants developed a theme for the conference during various on-line meetings and also posted resources for each other to consider as parts of the conference. An outcome of the conference was the determination of key educational stakeholders to continue to collaborate to develop educational resources that could be available in print or digital form for teachers to use.

The collaboration that took place in the digital professional learning environment facilitated problem-solving. Once participants became familiar with the technology and each other's professional contexts, they began to engage in problem-solving that was both authentic and occurred in real-time.

Authentic and real-time problem-solving

As participants confronted school challenges in their immediate contexts, they were able to access insight and advice from others in the digital learning community. These challenges consisted of issues such as curriculum development, working with peers, teacher supervision, understanding educational bureaucracies, and exploring

funding opportunities. Having access to school leaders in Haiti and Canada, often in real-time, helped provide quicker and more thorough responses to problems. That is, rather than being isolated and having to respond to a problem with limited input from others, the participants were able to access ideas from the group. Further, this advice could be sought immediately. In most cases, participants instant messaged others in the group and were able to get input almost immediately. An example of this “real-time” problem-solving was a conversation between a participant who was responsible for a new curriculum focused on the early years and appropriate activities based on children’s developmental stages. He had a Skype meeting with a Canadian participant and discussed similar curriculum that had been recently developed in the Canadian jurisdiction. He was able to take this input and incorporate it into the curriculum he was developing. Another system leader was able to access resources on financial management of schools she was responsible for by communicating with a Canadian school leader who was able to provide input and feedback on Excel files she was developing for schools throughout Haiti. For those in rural, marginalized areas, this type of access to support and resources was particularly beneficial.

Another example of problem-solving involved a participant who was working on a new curriculum to help with natural disaster preparation. He had spent months working on the curriculum material but was then called to provide training on it with short notice. He needed input quickly so that he could adequately prepare for a presentation on the topic. The principal was able to connect with one of the other participants in the DMP and get input into what he was proposing to present. He stated, “I really believe that this curriculum will enhance the ability of school principals to prepare for natural disasters in Haiti. The input I received from [name of participant] helped make the curriculum stronger. I am now being asked to share this resource with other schools.” The participant was able to receive input quickly and make the changes he felt were necessary for the development of the curriculum presentation.

A further example of real-time problem-solving involved a participant who was trying to coordinate a teacher conference in a fairly marginalized, remote area of Haiti. The participant was struggling to access resources that could be used in the conference. He posed the challenge to the others in the DMP and received a variety of resources to consider. As well, one of the participants who was originally from the region, was able to connect the principal with some key leaders in the area. One of the Canadian participants was able to send some PDF documents in French as supplementary resources. All of these efforts helped the leader and, according to him, expedited the coordination and effectiveness of the conference. Within 48 hours of the original need being communicated to those in the DMP, the participant had received enough input to adequately plan the conference.

Engagement

The participants in the Digital Mentoring Project had a range of experiences with digital technologies. All had used computers and had accessed information via the Internet. The two Canadian participants and two of the Haitian school leaders had significant experience with tablet computers and smartphones but the remaining Haitian participants had not. The rapid increase in cell phone usage in Haiti and Canada, as well as the more recent widespread access to 3G and 4G networks in both countries also paved the way for smartphone usage. Haitian participants were able to purchase data plans so that they could use the smartphone as a primary, and stable, way of accessing the Internet.

The immediate access to the Internet provided through smartphones and tablet computers seemed to magnify the participants’ engagement with the online professional learning community. This may have been due to the consistent and quick access to others that the technology allowed. One participant stated, “I have an old computer at home but I can rarely use it because our supply of electricity is so infrequent. As well, I have not been able to get a hard-wired Internet connection to it.” Most participants connected on a fairly regular basis with each other. Given the significant geographical, economic, and socio-political differences in regions and participants themselves, this level of engagement was intriguing. The barriers between “Haitian” and “Canadian” seemed to break down quickly, although language barriers were a challenge at times. All of the participants spoke some French and English which aided this process. As well, the technology itself may have helped engage the participants with each other. For example, participants explored how to use instant messaging and Skype. Having access to other participants, as well as resources available through the Internet, seemed to help participants stay engaged with the project and also increase their interest and capacity in educational leadership.

The heightened professional engagement that the digital technology seemed to facilitate was leveraged by one school principal to utilize digital technologies within his school. As a result of a contact he made from the DMP, he received a donation of tablet computers to use in his school. He established a wi-fi network in the school and provided training for the teachers around how tablet computers could be used to access resources for the students. Although beyond the scope of this paper, this project shows potential for considering how digital technologies can support collaboration, engagement, and problem-solving not only for principals, but also for teachers and students.

Early in the DMP, two of the participants felt that they had not been engaged in the DMP. As the project evolved, both became increasingly engaged in the online community. In one case, the participant had actually made significant strides to utilize digital technologies in his work. In one two hour period, the author observed the participant respond to more than 40 emails and instant messages on his smartphone. He was now utilizing the technology on an on-going basis and saw it as a key instrument to support his work. Thus, although there was not the initial level of engagement with colleagues in the DMP, this particular participant was experiencing a change in his work practices as a result of the experience of having a smartphone. A further example was the rapid uptake of BlackBerry Messenger (BBM) and Skype as communication tools. Participants used BBM to quickly communicate with each other and to share questions and ideas. Principals found the reliability and security of this messaging service as an improvement on the unreliability of email.

Discussion

The Digital Mentoring Project raises questions on how digital technologies can support the leadership abilities of school principals in Haiti and other fragile states. Certainly, the three key themes that emerged from this study indicate that collaboration, authentic and real-time problem solving, and engagement are enhanced in professional learning communities when digital technologies are accessed. In this section, these themes are further considered particularly regarding the ways in which these skills are enhanced by digital technologies and how 21st century leaders need to develop a new leadership stance that considers the globalized world in which they find themselves.

The Kinds of Questions Being Asked

Over the three years of the DMP, it became clear that there were two types of questions that participants were asking. The first were technical kinds of questions such as: How do schools allocate financial resources in other contexts? How do other principals assess teacher performance? How do I access curriculum documents? The other type of question which was asked was more reflective, such as: What am I trying to accomplish through my school? How is my school viewed in this community? What skills and attributes do I demonstrate in my leadership? What is my vision for education in this community?

It was interesting to note that as the DMP developed most of the questions and problems were not about the technology being used. One Canadian principal was able to give extensive help to his Haitian colleagues on how to use various features on smartphones but, even though the digital device was a relatively new piece of equipment for the Haitian participants, it did not seem to be a barrier to their eager participation. The Haitian participants did experience some challenges with issues associated with technology such as the cost of data plans for smartphones, having consistent access to electricity to charge their phones when needed, and having access to wifi for tablet computers.

It is noteworthy to consider the different types of questions and the evolution of these questions, from more technical at the beginning of the project to more reflective near the end. This process reflects the contention of Brooks and Normore (2010) that school leaders must be active participants in developing information literacy. They state that "...information literacy must too play an equally vital role in the preparation of educational leaders if these leaders are to effectively take their place as responsible citizens of the world" (Brooks & Normore, 2010, p. 63). The dynamic nature of digital technologies requires that school leaders develop the technical skills to utilize them. As well, digital technologies provide an opportunity for school leaders to broaden their critical understanding of who they are as leaders and the context of learning in a globalized world (Beetham & Sharpe, 2013).

Sustainability and Challenges

It is questionable whether the costs associated with a project such as the DMP are sustainable. In this case, a corporation and donors provided the smartphones and tablet computers but participants were responsible for the costs of data and phone plans. In Haiti, these costs are very reasonable (ranging from \$10-25/month) but this is still a high cost, particularly for principals who are working in small, rural schools and who are not receiving significant income from their position. The participants in this project were able to afford the monthly fees but would not have been able to afford the high cost of the initial smartphone/tablet purchase. In the future, this will be a significant consideration for similar projects involving digital technologies in the developing world (King & Mbogho, 2009; Motlik, 2008). At the same time, it is important to recognize that digital technologies can support a more inclusive form of school leadership professional development since anyone with a digital device and access to the Internet can access the digital resources (Chigona, Vally, Beukes, & Tanner, 2009). Further, smartphones have the potential to provide a link to a global learning community (Allen, 2011) which can support the ability to develop leadership literacies for the 21st century (Brooks & Normore, 2010).

Mobile technology is pervasive in the developing world (Allen, 2011) so it is important to consider projects such

as the DMP in terms of sustainability, scalability, and impact (Heeks, 2008). Heeks (2008) challenges those involved in development and technology work in the developing world to, "...stop thinking solely about needs—often defined from outside poor communities in rather paternalistic terms. Instead, ... think about wants—what the poor themselves actually demand and how their communities would use digital technologies if left to their own devices" (p. 33). Further, Wilkens (2008) provides helpful guidelines for consideration when organizing distance education courses in the developing world including: (1) Solicit input into the specific topics participants want covered; (2) Include local faculty to ensure contextually relevant information and resources are being used; (3) Design activities to be as interactive and engaging as possible; (4) Don't simplify the professional learning materials since participants want to be treated as co-equals and will want to learn from timely and research-based resources. In this way, digital technologies provide the opportunity for participants to control their own learning, a key aspect of Collins and Halverson (2009) framework of leadership transformation.

Collaboration Across Borders

Professional learning communities provide an opportunity for principals to problem-solve and to extend their professional knowledge (DuFour & Eaker, 1998). In the more-developed world, this typically happens through formal networks that meet face-to-face. In the Haitian context, the opportunity to collaborate with other school leaders is much more challenging. This is partly due to the lack of a professional network of principals in Haiti. Without such a network, there is no formal association through which principals can collaborate. The geographic challenges of the country, with many remote areas which are difficult to access by road, also compound the situation. The geographic isolation of schools has contributed to a mindset that is focused more on the immediate context (Sider, 2014). Further, school leaders have been reluctant to collaborate in Haiti because of the fear that other school leaders will take their ideas and profit from them (Sider, 2014).

The use of digital technologies provides a framework to combat these challenges and to overcome geographic, economic, and social barriers. Further, being able to collaborate with peers in other contexts, whether within one's own country or another country provides an opportunity to critically examine local and global issues. Collins and Halverson (2009) suggest that interaction is a key area of potential gain in the new era of transformation. This was an important aspect of the participants in this study: Not only did the smartphones and tablet computers provide a tool for interaction within Haiti, but they provided the means to engage with school leaders outside of Haiti as well. These interactions helped shape and inform the decisions of the leaders in a way that would not have been possible without the digital devices.

Increasingly, school leaders need to grapple with the challenges of globalization (Brooks & Normore, 2010) and digital technologies facilitate this cross-border learning experience. Brooks and Normore (2010) contend that the dynamic, interconnected nature of the literacies and leadership requires that, "This approach to leadership demands that educational leaders develop new skills, and broaden their understanding of the way local and global forces are emeshed in an increasingly sophisticated manner" (p. 74). As Samy and Carment (2011) state, "... sharing valuable lessons learned by the international community ... may help foster social cohesion by building informal networks and voluntary associations..." (p. 103). The participants in the DMP were able to share resources and lessons they had learned in their professional contexts. The informal ways in which conversations took place in the DMP provide a powerful example of how professional networks do not have to be formal, externally-established systems. Sharples, Taylor, and Vavoula (2007) state that this demonstrates "... coming to know through conversations across multiple contexts amongst people..." (p. 225) as a key aspect of learning in the 21st century. This distributed form of leadership which supports shared learning and knowledge-building is enhanced and enabled through technology (Stahl, 2003).

Conclusions

Despite the challenges, the opportunities that digital technologies present for educational capacity-building in the developing world are significant. The development of cell phone coverage (3G and 4G) in countries such as Haiti is astounding. Smartphones are portable, have long battery life, and are not as susceptible to the heat, humidity, and dust that laptop and desktop computers are. As well, the relatively inexpensive cost of voice and data plans provides an opportunity for the vast majority of school principals to engage in a project such as the Digital Mentoring Project. Cellphones and smartphones are becoming increasingly prevalent in Haiti and providing a device for school principals to engage in problem-sharing and problem-solving has the potential to dramatically influence education in Haiti.

Consistently across cases studied in the developing world, NGOs have been able to cost-effectively provide levels of support to schools which governmental departments of education cannot (DeStefano & Miksic, 2007). In fragile contexts such as Haiti, the public sector must be consulted and partnered with so that systemic change can be realized. In the case of the DMP, state officials were included in the project so that the lessons learned in the study

could be considered for broader implementation. At the same time, using private sector partners enabled the DMP to evolve without lengthy, bureaucratic restrictions. The DMP provided an opportunity to bring the public and private sector together, a real challenge for education in Haiti and other fragile states, to support the development of both.

Digital technologies also provide a way to realize gender equity in Haiti. Both male and female participants were engaged in the DMP. This may be a key positive attribute of the use of digital devices in contexts such as Haiti: The devices are gender-neutral and, as a result, women and men can equally share questions, problems, and resources. In a sense, this is a way to equally equip women and men in leading to transformative practices in contexts such as Haiti (Horton, 2012). This form of distributed leadership (Stahl, 2003) can be facilitated by digital technologies. Further study needs to be done on the issue of gender and accessibility to technology but the small sample in this study suggests that digital technologies can serve to provide greater access to professional resources for women in school leadership roles than traditional face-to-face professional learning.

The establishment of a digital professional learning community of principals in Haiti and Canada is only one step toward capacity-building. Further steps will include the development of on-line resources such as videos, documents, and wikis to build the resource-base for participants. Instead of simply communicating with each other in real-time, static resources will allow participants to build their resource base without continually re-inventing resources. These resources will be developed by Haitian school leaders so that they are authentic for that context. Further partnership with the Ministry of National Education will seek to replicate the digital professional learning community in a broader, national framework. These efforts will further enhance the sustainability of how digital technologies can support educational leadership building.

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