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THE USE OF TECHNOLOGY IN ONLINE CLASSROOMS: ARE WE IN NEED OF A PARADIGM SHIFT?

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Abstract:

As online courses increase in popularity, we question whether we have imparted a pro-innovation bias towards the use of technology in online courses. Through a survey of students in online courses, we identify and discuss three paradigms established for online courses. Specifically, we address the pro-innovation bias towards technology, how to deal with “distance” in an online course, and using specialized technology for online courses. We provide recommendations and suggest future research directions.

Keywords: Online courses, distance learning, pro-innovation bias, paradigms

I. INTRODUCTION

As online courses increase in popularity (Britt 2015), paradigms have been established about the most beneficial use of technology in online classrooms (June 2014; Palloff and Pratt 2007). While we realize the importance and necessity of technology use in the online classroom, we question whether we have imparted a pro-innovation bias (Li 2014; Fichman 2004) towards the use of technology in online courses. For example, we posit that while technology can be utilized to facilitate communication between instructor and student (Joksimović et al 2015), it may also cause the student to feel more distant in an online course, which may lead to higher dropout rates (O'Brien, 2002; Carr 2000) and lower student satisfaction with the learning experience (Kenny 2003). Moreover, students have expressed a perceived lack of sense of community in online courses (Song et al 2004).

Technology educators have termed the use of social media in distance learning as ‘learning 2.0’ (Lee and McLoughlin 2010), positing that the use of new types of technology can facilitate communication and connectivity; however, studies indicate that students may not always be familiar with the tools (McLoughlin and Alam 2014). Furthermore, in some disciplines such as medicine, this use of social media in distance learning has been referred to as a “disruptive innovation” (Sherbino and Frank 2014, p. 545).

In this paper, we seek to examine existing paradigms and determine whether the technology implemented in online courses truly improves a student’s perceived ability to better learn course material in online courses. We conducted a descriptive survey of students in courses that are 100% online to determine their perception of the technology used in online courses. We will begin by discussing the extant findings regarding technology use in online courses. Then, we will present findings from our survey of students in online courses and discuss the implications of the findings.

II. METHODOLOGY

In order to determine student's perceptions of technology utilized in online courses, we conducted a survey of students who are taking courses that are 100% online. We surveyed students from 3 different courses to determine their beliefs about the use of technology in the online classroom (see Appendix A for the Survey Instrument). We sought to determine their perception of the influence of the technology on their interaction with the instructor. We analyzed this data as more of a case study than a data set that needed quantitative analysis. Specifically, we sought both the quantity of responses to a particular item, as is typical with quantitative studies; however, we were most interested in investigating the respondents with new or different ideas. We posit that many students may accept the structure of their current course, as they do not seek to question the existing paradigm. However, we postulate that there exists a small number of students who may question the way technology is currently being utilized in the classroom and may suggest alternative methods, and we term them "innovator students" (Rogers 2010). We seek to identify these idea seeds and expounds upon them to propose alternative methods or ideas for the use of technology in the online classroom.

Table 1: Questioning the Paradigms Established for Online Courses

Questioning the Paradigms Established for Online Courses

- Pro-Innovation Bias Towards Technology
- How to Deal With "Distance" in an Online Course
- Using Specialized Technology for Online Courses

We will begin by discussing our pro-innovation bias towards technology in the online classroom, then we will discuss how to deal with "distance" in an online course, and finally we will present recommendations regarding using specialized technology for online courses.

III. DESCRIPTIVE STATISTICS

We had 20 respondents across 3 different online courses. The respondents were more likely to be female, with 14 (66.7%) female respondents. A high number of respondents (42.9%) were between 25-30 years of age (see Appendix B). Most of the respondents (75%) were MBA students (see Appendix B). The respondents tended to be experienced at taking online courses, with 33.3% having taken more than 5 online courses (see Appendix B).

IV. DISCUSSION

We first sought to determine the students' views on the increased use of technology in online courses. For the item "Name additional technologies that you believe would improve your ability to better learn course material in online courses (even if they were never used in your online course)", we received many "none" or "N/A" responses. We posit that many students will accept the status quo of the online classroom and not question the structure. However, we received some feedback from certain students, whom we will term "innovator students" (Rogers, 2010) who questioned the technology currently utilized in online classrooms. Specifically, one respondent stated, "More student to teacher interaction. No more technology. Just more teaching." We posit that our traditional view of technology in online courses is that it builds community in an online course; therefore, we are often encouraged to increase the amount of technology in online courses to increase these positive effects. This respondent, conversely, perceived the technology as building a barrier between him/her and the instructor, rather than bridging the gap that can be innate in a course that is 100% online. *Therefore, we recommend that additional research be conducted, questioning the pro-innovation bias (Fichman 2004) we have oftentimes imposed upon online*

courses to determine the impact of implementing a greater number of technologies in an online classroom environment.

We next sought to determine the students' perceptions regarding the effect of technology utilized in online courses. One respondent stated that "Online courses are distant...I will not be taking anymore online classes." Although various technologies are being implemented within these online courses to reduce the inherent distance of online courses, the implementation may be ineffective. We postulate that this online student's feelings may stem from a course that does not utilize enough technology to bridge the gap. However, we propose that the technology used may actually increase the feeling of distance in some classes. *We suggest that as we ask students to shift their learning paradigm (Palloff and Pratt 2007) from a traditional face-to-face course to a 100% online course, we should seek to retain certain elements of face-to-face courses that enable the student to feel more involved in the course, so that they do not feel so "distant".*

One of the technologies that online students recommended involved software that enables synchronous interaction that would provide an easier transition from a traditional face-to-face course to a 100% online course. Multiple respondents replied that they would like *the inclusion of a live chat in their online courses*. Indeed, research has found that a student's confidence about their ability to communicate online has been found to positively influence student satisfaction (Palmer and Holt 2009). We support the use of technological tools that enable this rich method of interaction in the classroom. However, we realize that the inclusion of a synchronous component to a course may not always be possible.

While we agree that this technology can enable a student to feel more interactive in an online course, some instructors have been unable to implement live chats in their courses, as traditionally online courses have not been assigned a meeting time. We postulate, however, that by *specifying a meeting time for online courses*, instructors are able to mandate attendance for a live chat. While this may reduce the flexibility benefit of an online course, we believe that the increased ability to interact using live chat supersedes any reduction in flexibility.

One of our other areas of inquiry involves the type of technology selected for 100% online courses. While book publishers and educational software organizations are beginning to offer multiple technology options for online courses, we question the impact of adopting these various technologies that fall outside the realm of technology that students typically utilize. While we generally support the introduction of new technology in the classroom, we question whether it is better to adapt our teaching to the technology that the student has already adopted, or whether we should mandate use of these new educational technologies that book publishers and educational software organizations are touting. Some of the respondents believe that "social media" and "Facebook" would most enhance their ability to learn the course material if it was used in an online course. We posit that rather than asking the online students to become accustomed to new educational technologies that require them to learn how to use new software so that they can learn the course material, if we instead utilize technologies that they are already comfortable with, then we as instructors can enter the student's technological world rather than introducing new technology that may impose a steep learning curve and may never be utilized again outside this course. *By presenting course material in a technological context in which they are already comfortable, we posit that we would enhance their level of engagement in the course, and provide them with a better opportunity to learn the course material.* By permeating their typical daily technological use with course material, we can better amalgamate the course material into their daily lives, rather than implementing new educational technologies which may facilitate student use once-a-week or once-a-month. For example, one time the first author encouraged the student to post photos of new technology they saw as they went about their daily lives. This activity enabled them to utilize technology that they are already comfortable with; therefore, the boundaries between coursework and daily lives were bridged, as

the students were constantly looking for new technology that they encountered, whether it be on a business trip to another city or close to home.

V. LIMITATIONS

One limitation of this study is that 75% of the students are MBA students. Therefore, these recommendations may not be as effective in undergraduate programs, as the students may have different needs or expectations. Therefore, we recommend that other researchers study the impact of technology use on student's perceived ability to better learn course material in undergraduate courses that are 100% online.

VI. CONCLUSIONS

As many online instructors are attempting to enhance the online learning experience, overcome the negative issues associated with online courses, and build a "learning community" (Palloff and Pratt 2007), we propose that we must begin by questioning some of our established paradigms about best practices in online courses. By listening to the students who take online courses, we can best determine how to facilitate the learning process in the online course and develop online courses that provide the most effective learning environments for the students.

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VIII. Appendix

Appendix A

Survey Instrument

1. Name all of the technologies that your instructor implemented in this course.

2. Name all of the technologies that you actually used in this course.
3. Name additional technologies that you believe would improve your ability to better learn course material in online courses (even if they were never used in your online course).
4. Name the 3 technologies that you use most regularly, regardless of whether they are used for fun or coursework.
5. Which of those 3 technologies do you think would most enhance your ability to learn the course material if it was used in an online course?
6. To what extent do you believe that technology can be used in an online course to facilitate your ability to learn the course material?
7. List 5 words that describe your feelings about software tools used in online courses.
8. Additional Comments.

Appendix B

Descriptive Statistics

Age of respondents

Age	Percent	Count
19 and under	0.0%	0
20	4.8%	1
21	4.8%	1
22	9.5%	2
23	14.3%	3
24	14.3%	3
25-30	42.9%	9
31-40	9.5%	2
Over 40	0.0%	0

Level of Study

Level of Study	Percent	Count
Freshman	0.0%	0
Sophomore	0.0%	0
Junior	10.0%	2
Senior	15.0%	3
MBA (Graduate)	75.0%	15

Number of Online Courses Taken

Number of Courses	Percent	Count
1	19.0%	4
2	4.8%	1
3	28.6%	6
4	9.5%	2
5	4.8%	1
More than 5	33.3%	7