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A case study using technical support within online technology courses: Instructor lessons learned

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Abstract

The health pandemic has pushed academic institutions and students into an immediate online environment with limited technology support and training. As a result, many students are overwhelmed and frustrated with the online technology used within their courses. Student's technology frustrations often impact course retention rates, teacher evaluations, student learning, and course enjoyment. As a result, educators are looking towards innovated ways to reduce student's technology frustrations. One possible solution is to provide peer technology support. This research explains methodology as well as the lessons learned from utilizing an information technology (IT) graduate assistant (GA) for the first three weeks of two IT undergraduate courses during the Fall 2020 semester. The results were positive.

Keywords: Online learning, Technical frustrations, and Technical peer support

Introduction

The best laid out content or assignments from any online educator in any content area may have student technology glitches. For example, a slow Internet connection, wrong or missing software installation, compatibility, no sound, and website down. As a result, student and instructor frustrations are real.

Eng (2020) examined students' perceived difficulties within online courses. He conducted a simple survey for his Spring 2020 students to complete. A total of thirty-four students completed the survey. Eng found that technology issues accounted for 18% of the reason why online course are difficult for students.

Additionally, the University of Illinois at Springfield (2021) states that technology is a weakness to online learning. Specifically, the university believe that the cost of technology often provides an equity and accessibility barrier for students. Additionally, the university also note that computer literacy and usability of technology often creates panic and fear for students.

Thus, faculty are faced with a difficult challenge to teach when students lack the required resources, technical knowledge, and assistance. This challenge has led many faculty members to seek creative alternate ways to aid students with technical issues within a course. One possible way to assist with technical challenges within the classroom is by incorporating technical support via students (Aguilera-Hermida, 2020).

Recognizing that technical support is an essential resource for online (IT) undergraduate courses, the authors have turned to integrating technical support in the form of a Graduate Assistant (GA) and peer student into their online and classrooms. The goal of this study is to explain the methods, as well as, instructor lessons learned from incorporating GA and peer technology support into online undergraduate courses. This paper has practical implications for online faculty wishing to adopt technical support within their online course. The remainder of this paper is structured as follows: literature review, research goal, methodology, results, lessons learned and conclusion.

Literature review

Assistance within the classroom from a peer can include the theories of peer-mediation and peer-influence strategies while providing a method of instructional supervision that can support or lessen student frustration with technology. Salta et al. (2022) found that the instructors that demonstrated more communication and personal interactions both with students and on a peer level, engagement was a significant factor in developing a sense of community academically. Additionally, Rotar (2022) found that a holistic approach to student online learning support can be beneficial for overcoming learning barriers, difficulties that can be sourced from lack of engagement, motivation, and technical skill support.

As students migrate to online learning, the deficit of students' technological abilities is addressed as an issue within the online classroom (Aguilera-Hermida, 2020). Students taking technology courses may enlist from a multitude of disciplines. In contrast, the skills needed to be learned within the course space may need specific programs installed and utilized to engage in the coursework. As found, instructors are provided with the training to use the coursework technology; however, this training is not sufficiently passed to the students within their course (Evans & Robertson, 2020). Losh (2021) found that not all students are technically savvy, and an instructor may presume that the students have technology skills. However, the skills acquired may not equate to the level of technical needs of the course room. Losh (2021) asserts, "Just showing a class how to navigate software menus can be a surprisingly slow process" (para. 3).

Student frustration

Online learning has utilized more autonomous learning that requires students to initiate their sense of agency to complete assignments. As online learning does not have the physical element of the instructors' physical presence, the student may use digital tools to interact while in the classroom via cloud-based video communications, which allows for a face-to-face meeting. Aguilera-Hermida, (2020) found that students frustrations were self-identified when asked to use technical tools in the classroom.

“I have never taken an online course, so this was beyond stressful and I know that our generation is supposed to be very tech-savvy but in my personal experience, I am not and this process was a struggle that I hope I never have to go through again” (p.5).

An overview of technology weakness identified by the University of Illinois, Springfield (2020) included frustrations stemming from the accessibility of technology both in price to acquire and availability. Computer literacy is another point of contention, whereas those who may have self-identified as computer literate have developed a fear of using technology as demands may heighten in the virtual classroom. Finally, the limitations of technology were addressed. At times the software requested to be used may not be as user-friendly as initially found. Additionally, as computer savvy as one may be, the accessibility of the device or internet is at times out of the individual's control.

Peer support

The technical challenges that students face are not only centered around the uses of the technology for class usage but also the acquisition, downloading, and installation of the software itself to engage in hands-on learning or communication. Peer Mediation is a process for resolving conflicts; most literature points toward the use of peer mediation within the classroom as a tool to mediate disputes between students (Gunduz et al., 2017). However, peer-mediation in this article can assist with the student-to-student mediation focusing on issues surrounding technical questions or alleviating the student's technical distress.

Salajan et al., 2011 define peer influence strategies "not as a hierarchical pressure mechanism, but rather as a collegial medium in which faculty members help each other in finding meaningful strategies to use learning management systems" (p. 493). In this study, peer influence can be applied to students as they navigate the learning management system and the application software needed to integrate hands-on learning. The use of peer mediation and peer influence can provide for peer instruction. Peer instruction can offer an active learning strategy that scaffolds learning, promotes deeper engagement, and fosters conceptual understanding through direction (Nerantzi, 2020).

Peer instruction in the classroom

The application of peer mediation, influence, and instruction can be used within a peer technical support framework within an online classroom. Conceptually, peer support within a classroom setting is utilized for "tutoring"; however, with tech support within the classroom, the student can aid in the technology and not focus on answering the questions of course content. Peer technical support within the classroom can allow the student to serve as the technical trainer, e-coach, or tech tutor to guide the student in the general use of classroom technology (McSpadden, 2018; Regan et al., 2017). As McSpadden (2018) found, implementing a peer in an online classroom to support students technically can lessen the student's fear of asking the question of the course instructor.

Research goal

This experimental study incorporates peer and graduate assistant (GA) technical support within online IT undergraduate courses. Specifically, this research explains the methods as well as instructor lessons learned from incorporating GA and peer technology support into online undergraduate courses. This research adds to the current body of literature and provides a possible foundation for educational institutions, administrators, and educators in designing online curriculum.

Methodology

This research was conducted at a higher education state institution in Pennsylvania. GA technology support was utilized during the Fall 2020 semester and peer technology support was used during the Winter 2020 semester. Instruction was online due to the health pandemic.

GA technology support

Prior to the start of this research the lead author requested and received approval from the Dean to utilize a GA for technology support within the instructor's undergraduate information technology (IT) courses. Upon approval, the instructors completed the six tasks outlined in table 1.

Table 1: Tasks Identified and Explain to the GA
<ul style="list-style-type: none"> Enrolled the GA in the role of “student support” in the LMS for two undergraduate IT courses. Specifically, ITM 302 (Business Application Development) and ITM 322 (Project Management) were selected. The student support role only grants viewing access to course content posted by the instructor. No access to student submissions or grades is available.
<ul style="list-style-type: none"> E-mailed and spoke with the GA regarding their role and acceptable and non-acceptable tasks. The GA’s role followed the University’s GA guidelines.
<ul style="list-style-type: none"> Posted the GA’s Name and contact information in the course LMS.
<ul style="list-style-type: none"> Sent an e-mail to all students in the course explaining the live technology support available by the university and within the course.
<ul style="list-style-type: none"> Established weekly information sessions (e-mail, zoom, or phone) with the GA regarding the task at hand.
<ul style="list-style-type: none"> Requested the GA create a log and regarding technical request, and the success of their technical support.

It is important to note that this research only utilized the GA for the first three weeks of class for a total of 2.5 hours per week. The first three weeks of class was selected due to the timing of the add/drop period, technology installation and getting started with the required software. Additionally, the GA was not provided for the instructors after the first three weeks of class.

Peer technology support

During the first two days of the course, students that successfully enrolled in the required MyITLAB software by Pearson Inc. were asked if they would like to earn 5 extra credit points of their first graded lab assessment by being a Peer Technology Support. Upon acceptance the students were identified as a Peer Technology Support and the instructor completed the five tasks outlined in table 2.

Table 2: Tasks Identified and Explain to the Peer Technology Support Member
<ul style="list-style-type: none"> E-mailed and spoke with the student regarding their role to assist students within the class with enrolling into the required Pearson MyITLAB software.
<ul style="list-style-type: none"> Defined a Peer Technology Support member as a student assisting other students experiencing issues enrolling into the MyITLAB software.
<ul style="list-style-type: none"> Posted a list of Peer Technology Support student’s names and e-mails in the course LMS.
<ul style="list-style-type: none"> Sent an e-mail to all students in the course explaining the technology support available by the university and via the Peer Technology Support within the course for help with enrollment with Pearson’s MyITLAB.
<ul style="list-style-type: none"> Requested each Peer Technology Support e-mail the instructor with the names of the students they helped.

It is important to note that this research only utilized the Peer Technology Support members for the first three weeks of class. The first three weeks of class was selected due to the timing of the add/drop period, technology installation and getting started with the required software.

Results

The overall results from using a GA for technical student support within the classroom were positive for each IT courses. Specifically, the GA did receive technical e-mails from students enrolled within each course. Furthermore, GA log and e-mail indicated that all 2.5 hours of their allotted time was used in answering student technology questions.

The overall results from using Peer Technology Support members for assisting students with enrollment into Pearson's MyITLAB were positive for each section. Specifically, the Peer Technology Support members did receive e-mails from students requesting help. Furthermore, it was self-reported that 40% of the students utilized the Peer Technology help. Most importantly, all students were successfully enrolled in Pearson's MyITLAB by the end of Week 3.

Lessons learned

The instructors learned many lessons from this exploratory research study. First, after lengthy discussion we believed that the Peer Technology Support seemed to yield additional benefits beyond the task at hand. Specifically, the instructor's witnessed the students being honored and proud that they were selected to be Peer Technology Support members. Peer Technology Support students were happy to be incentivized. Additionally, an overall increase in student collaboration took place throughout the course. Thus, a sense of community and trust was created among the students and the Peer Technology Support students. Finally, and most importantly, the students were ready for MyITLAB assignments by the end of week 3.

GA Technology Support was also effective as the instructors were less technology glitches when the first hands-on assignment is due. Additionally, the instructors were able to get a since of the difficulty regarding an introduction assignment with the required software. As a result, the instructor was able to provide better quality course materials and instructions for students.

It is important to note that students did try to go outside the scope of the GA Technology Support member's position. For example, a student asked for answers or for the GA to review their work. These cases were reported to the instructors and the instructors addressed the student's comments and questions. However, this process tended to decrease communication and a sense of community within the course.

Conclusion

In conclusion, the literature discusses the possible issues surrounding technical issues within an online classroom where methods can be applied to utilize students as technical or peer support within the digital classroom to attend to students' technical issues. The lessons learned from this study showed that using peer technical support within the classroom allows the teacher/instructor to focus on the content and not the tools that support the course content.

It is important to note that this study is not without limitations. First, the study was limited to a small sample size as it was two undergraduate IT courses in the same department at the same university. Second, data was not collected or assessed. Future research should address these limitations and continue to expand efforts within this area. While this study contains limitations, it also provides a foundation to help educators reduce student technical frustrations.

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