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Online Student Satisfaction: An Examination of Preference, Asynchronous Course Elements and Collaboration among Online Students

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Online courses provide students the opportunity and flexibility to attend college courses on their own schedule and within the comforts of their own home. While most enjoy the flexibility offered by this type of course delivery method and the quality between distance (online) and face-to-face courses being relatively equal, the question has been raised about the student satisfaction in online or hybrid courses (online courses containing synchronous elements). This paper seeks to explore student satisfaction toward online courses through the lens of preference to delivery method, the impact of asynchronous instruction on satisfaction and the role of rapport/ collaboration between students in an online environment. To fully understand the impact that these aspects have on student satisfaction, a survey was constructed and distributed to the entire student population of the Learning Technologies department at a public institution of higher learning in Texas. As an added dimension to the results obtained by the survey, interviews were held with a subsection of the survey participants to further explore the elements that impact their satisfaction towards online courses.

Keywords: Student Satisfaction, Online instruction, Technology, Asynchronous instruction, Synchronous instruction

The move to add more online classes to a list of courses offered by U.S. colleges and universities are gaining momentum every day. For instance, according to Allen and Seaman (2007) "almost 3.5 million students were taking at least one online course during the Fall 2006 term; a nearly 10% increase over the number reported the previous year." This tremendous growth in the demand for online courses means that the need for reliable technology platforms to deliver the educational experience is also becoming more important. Mellander (2012) reinforced this point about an increasing awareness of technology in higher education noting that there are now three modes of instruction for higher education: face-to-face lectures, online, and hybrid learning.

With this turn to technology as part of the new college educational experience, both students and instructors have to feel comfortable and confident in using any of the platforms chosen for their respective classes since so much time will be spent online. These platforms are replacing the four walls of brick and mortar classes. These platforms like Blackboard, Moodle, and Schoology primarily provide functions such as: email, whiteboards, webcams, chat pods, PowerPoint or PDF viewing sections, and websites specifically used to post materials, assignments, and comments. These tools can be used in both synchronous and asynchronous classes as well.

The problem facing students and instructors in regards to using this educational environment, meaning the various platforms, is making sure that connections are

made. These connections take the form of building rapport from student to student, along with between students and the instructor. For example, if a student has a difficult time finding a syllabus or specific comment in a post by another student, then the educational experience has been degraded.

Students and instructors lead such busy lives that they are constantly searching for information and not finding it can de-motivate the person conducting the search to the point in which that person does not want to give a great effort anymore. On the other hand, an easy-to-use platform can greatly enhance the value of the information covered in class because the motivation to learn will increase along with the relationships between students and the instructor. This is especially true in the case of an online class, rapport and relationships go a long way in creating a learning environment in which people collaborate and exchange ideas in a productive manner because there is either no in-person contact or very little.

From a theoretical perspective, “online courses” refers to a course that presents virtually all of its content online and where its participants do not typically have face-to-face interaction (Allen & Seaman, 2001, p.7). This definition is the context by which this paper will be referring to courses that are considered 'online.' Those studies focus primarily on how well the students recall and retain information in virtual environments compared to the same factors measured in traditional brick and mortar classrooms. While those studies add great value to developing a complete picture of the direction of higher education, it’s equally important to analyze the tools that students and instructors will use. The attitudes, biases, and satisfaction in using these tools remain critical factors for understanding how to improve the quality of modern higher education.

By gaining a greater understanding about the attitudes that students have towards using the various functions within educational technology platforms, improved instructional design principles will be refined and implemented immediately. This paper seeks to examine and answer questions about how the environmental aspects of an online graduate program impacts student satisfaction but also how these elements affect the student’s preference towards a course offering (online or face-to-face), asynchronous instruction’s impact on satisfaction and the role of rapport and collaboration among students in an online environment. This examination of these concepts will lead to insights that could assist in the creation of different approaches to teaching individuals online that improve the student's ability to learn through strategic uses of technology which also emphasizes the social connections between those that they teach.

Literature Review

The process for teaching courses in a traditional face-to-face environment is distinctly different than instructing a course online. While the philosophical goal of presenting information to be learned and retained by a student remains the same, there are different expectations for a student completing a course either face-to-face or online. These preferences typically range from "interests (course offerings), learning styles to student needs" and the ability to complete courses on their schedule (Lim et al., 2008). Ultimately, it leads to a question of satisfaction and what determines the effectiveness of the instructional method. After all, the philosophical outcomes between the two delivery methods do not change and yet, a student might prefer one over the other.

The preference for this method of instruction stems from decisions for how to best deliver course content. Online education is by definition, the "use of technology in exchanging ideas and providing access to more people" within an educational environment (Bebawi, n.d.). Bebawi's definition is very helpful at explaining the purpose of online instruction. It exists as a method to reach more students geographically and more importantly, students outside of traditional populations. As most (or in some cases, all) of the instruction takes place in a digital realm, course content is both managed and delivered through a learning management system. Within the realm of online courses, a learning management system (or LMS) provides the ability to “organize and manage e-learning activities” such as course materials and discussion formats but an LMS can adopt a pedagogical role that has a “social constructivist approach” (Dalsgaard, 2006).

In terms of effectiveness of the course delivery method, research has indicated that there is "no difference in student performance" when a course is taken in a traditional classroom or online (Lim et al., 2008). This lack of differentiation between the two delivery methods would lead one to believe that since they are essentially equal then effectiveness does not impact the satisfaction levels of an online student. If the level of satisfaction for the student is not solely a byproduct of the effectiveness of the delivery method, it is the opposite. Summers, Waigandt, and Whittaker (2005) provide insight in the role of technology and that it should be chosen to fit the curriculum and not the other way around (p. 235). This sentiment indicates that the selected learning management system is not the main determinant for achieving satisfaction in the student.

Student satisfaction is determined through various other factors in addition to the learning management system. The most important of which is the sense of "community" that must exist between the student populations in a course or degree program that takes place exclusively online. The sense of community is defined within an educational context as the "feeling of connectedness among community members and commonality of learning expectations and goals" (Rovai, 2002, p. 322). This definition is important as it provides insight into the role that community has upon satisfaction levels within online higher education courses.

Drouin and Vartanian (2010) explored the role that effective community building has on reversing perceived drawbacks to the method of delivering courses online. Essentially, through the use of community activities (such as "fostering interactivity and social learning") can reverse "an online student's feelings of isolation and being disconnected from their instructors, classmates and school" (Drouin & Vartanian, 2010, p. 149). There have been studies into effective methods for developing a functional online community. West (2010) discusses the importance in facilitating an online community through various techniques. From West's (2010) perspective, the key is focusing on four types of interaction, "learner-learner interaction, learner content interaction, learner-teacher interaction, and learner-tool interaction" (p. 70).

While West establishes four areas of interactional emphasis, the consensus is that the essential element to building an online learning community is learner-learner interaction. The foundation of learner-learner interaction is focusing communication into a course's instruction. Misanchuk and Anderson (2001) highlight the need to create active participants in online courses as said individuals tend to feel like part of a community when they are "actively participating in discussions and other class activities" (p. 4). This notion of active participation as it relates to community building also results in an added dimension in the learning process. Namely, Wilson, Ludwig-Hardman, Thornam, and Dunlap (2004) support the belief that participation is necessary as it provides the opportunity for students to engage in mutual learning as students "learn from and with others and to contribute to others' learning."

The importance of active participation has been highlighted as a solution for removing feelings of isolation in online students and results in higher levels of satisfaction. Of course, within the context of an asynchronous course, the question remains about how to foster participation and its role in improving student satisfaction in these courses. Nandi, Hamilton, and Harland (2011) explain the process for achieving effective asynchronous participation with discussion boards by strengthening the learner-teacher interaction in the course (p. 8). By strengthening the learner-instructor interaction in asynchronous course elements (discussion boards), it is possible for the instructor to maintain the responsibility for driving the discourse (Nandi, Hamilton, & Harland, 2011, p. 8). Moreover, Yukselturk and Yildirim (2008) support the notion that asynchronous course functions (such as discussion boards) can increase student satisfaction as the result of quality interaction between the student, the instructor and their fellow students.

Ultimately, the purpose of asynchronous instruction is to promote collaboration and rapport among online students. Research indicates that this is achievable through the presentation of ideas. van Aalst (2006) refers to the concept as "idea diversity," where students utilize the ideas of their peers to "improve their own understanding" (p. 282). Jorgensen (2002) explains, outside of the context of interaction, collaboration can result by integrating it into the "value system of a course" (p. 9). She adds that this can assume the form of course assignments or "extra credit for assisting other students (Jorgensen, 2002, p. 9).

From a more broad perspective, interaction (communication) between students in a course or the student and instructor contribute directly to the learning experience (satisfaction) of the participating student. Drouin (2008) offers a position that the responsibility for developing this interaction (and by extension, rapport) between peers is the instructor of the online course. Specifically, instructors will create the environment, which allows for an "opportunity to discuss, analyze and exchange information" between students or the instructor (Drouin, 2008). To fully cultivate interaction or collaboration in a completely online setting, it places much importance on technology. Kearns and Frey (2010) noted that students "feel their usage of technology such as email and instant messaging support learning activities" in an online setting (p. 43).

Earlier, the subject of the learning management system (LMS) was discussed and it is brought up again as it acts as the technological basis for most courses and also the means for conducting the interactions which impact student satisfaction. An LMS is the place where "coursework is organized, learning resources accessed, work returned and collected" but most importantly, it is the place where "discussion occurs and feedback delivered" to the student (Rubin, Fernandes, & Avgerinou, 2013). This particular technology in an online course provides a practical means to develop the interaction effectively by how the course is structured in the LMS. Yukselturk and Yildirim (2008) explain the issues affecting distance learners that can be addressed in the LMS as a "lack of prompt feedback, technical difficulties and ambiguous course instructions" (p. 52). Bolinger and Halupa (2012) second this opinion and provide the lens through which online student satisfaction should be investigated through questions about the "reliability of technology and interactivity" within a course (p. 82).

Methods

Participants

The ultimate purpose of this study is to better understand the level of satisfaction of graduate students towards the online delivery of courses. This required that only graduate students be recruited as participants for this study. The available student pool that the participants were to be drawn from was the department of Learning Technologies at an emerging research university in the southwest. The rationale behind this decision to recruit from within the department of Learning Technologies was simple. It provided the means of clearly defining the preferred participant as the program only offers graduate level coursework, which effectively minimizes or

eliminates the possibility of an undergraduate student making it into this research study. The method for recruiting participants was through the department's listserv or list of student email addresses. Once the survey was created and placed in the online delivery method (Qualtrics), the decision was made to obtain at least twenty to thirty current graduate students in the program to participate in this initial pilot study. This survey exceeded this expectation for participants as thirty-four individuals agreed to participate in this research study.

By limiting the focus to the graduate student population of this specific academic department, a limitation presented itself and must be addressed. Namely, the department of Learning Technologies offers face-to-face courses in addition to those that are completely online in their composition. The limitation as perceived was that students taking strictly face-to-face courses might find their way into this study. This limitation will not diminish the results obtained from the participants; it will simply require the participant to draw upon their experiences with the delivery method (online courses) from a previous experience.

Materials

Numerous materials were utilized to conduct and explore the level of satisfaction in online graduate students taking courses via a learning management system or LMS. The foremost of which was the survey designed as the primary means for understanding and evaluating the participant's satisfaction. The survey was composed with thirty-plus questions, the answers to which would provide insight into the aforementioned sentiment. This survey contained several types of questions ranging from demographic information to experience with online courses.

Most importantly, the final portion of the survey was a collection of questions based on a Likert scale to determine the importance (less or more) of the learning management system, synchronous meeting sessions and rapport on their respective satisfaction as online students. The intention of these questions is simple and ultimately will provide the sought after insight required for a better understanding of the variables that impact graduate student satisfaction. The creation of this survey was one of the larger tasks of this study, as it would provide the foundation for future uses as it was developed into possibly becoming an instrument for measuring the participating student's aforementioned attitudes towards the medium. This survey contained sixteen specific questions that were created during discussions about the determinants to student satisfaction in online classes. These discussions sought to understand the variables, causes and barriers to satisfaction student satisfaction and questions were constructed for the survey which best encapsulated these elements. The eventual process of conducting this study again will assist in the refinement of this survey to ensure that the questions ask the right questions to accurately gauge the participant's level of satisfaction towards this medium.

The survey was then delivered to potential participants via the online survey system known as Qualtrics. Qualtrics was chosen as the preferred method of delivering the survey because of its simplicity and the access to the service through the department. Namely, once the survey had been composed, a URL was then created, which provided the means for delivering it to the entire list of graduate students in the quickest fashion possible. In addition, the ease of use for the participant insured that the number of abandoned or incomplete surveys would be minimal and would allow the researcher to get enough participants for the purpose of this research study. The reliability of the questions appearing on this survey was investigated using reliability testing in SPSS to obtain the Cronbach's alpha, which insures the validity/ integrity of the questions and will be discussed at length in the analysis section. Moreover, the data which appeared in Qualtrics would later be exported to SPSS and would be examined using several statistical methods including factor analysis, comparing of means to create scales for the factors, ANOVAs effect size and unpaired t-tests, all of which provided insights into the responses obtained. The quantitative insights obtained from the collected data in Qualtrics will be discussed thoroughly in the analysis section of the paper with the discussion regarding the validity of the survey instrument.

The final material utilized in this study was the act of interviewing participants to understand their sentiment towards online education but also the responses to the questions from the survey. At the conclusion of the survey, participants were asked to participate in a short follow-up interview (either by telephone or electronic mail) to flesh out or better understand their responses to the survey questions. The number of interviews with participants would be dependent on the number of completed surveys and will assume a percentage of those respondents.

Procedures

The procedures for this research study assumed three phases. The first was the selection of a delivery method for the survey. Once the decision was made to utilize Qualtrics, the survey was developed and questions chosen that represented the elements (learning management system, synchronous meeting sessions and community building) that would affect the level of satisfaction in online students. Once the composition of the survey was completed, a link to it was emailed to all members of the department of Learning Technologies listserv (or electronic mailing list). A link to the survey

Demographic Information by Percentage:

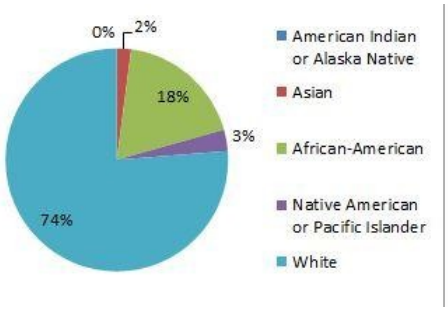

Fig 1. Ethnicity of Participants.

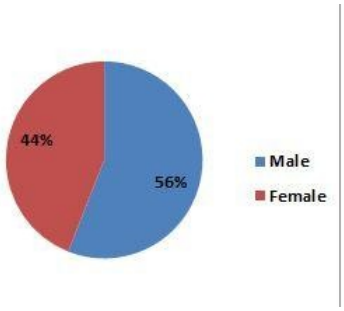

Fig 2. Gender by Percentage.

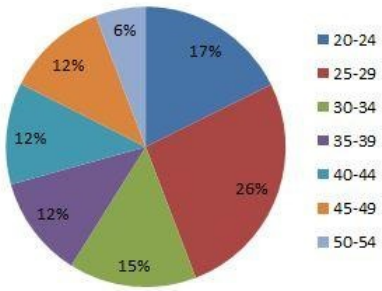

Fig 3. Participant Age by Percentage.

was also included to all current professors within the program to be provided to their students to maximize the visibility of the study and ensure that the minimum number of participants was achieved.

Once the survey had been sent out through the aforementioned channels, it was to remain open for the duration of seven days. The amount of participants anticipated to complete the survey for this study was within the range of twenty to thirty individuals. If the survey period had closed and the minimum twenty participants not met, it would remain open for an extended period of three days. If twenty or more participants complete the survey, it would close as scheduled and the data would be analyzed. The reason for having roughly thirty individuals participate (The survey had thirty-four participants) was to act as a pilot study to evaluate the successful processes for conducting the study and subsequent studies will have larger number of participants completing the survey and interview. This initial analysis of data would be quantitative and examine the percentages available and provide insights into demographic information such as age, gender, academic level and amount of online courses being taken. The evaluation of this specific section of data will also be discussed further in the analysis section of this paper.

After the survey period closed, the process to select interviewees would begin. Prospective interviewees would be selected from both ends of the satisfaction spectrum to examine what affects their levels of satisfaction towards online courses either positively or negatively. The amount or percentage of graduate students was dependent on the overall number of individuals who completed the survey. Ultimately, subsections from both ends of the spectrum of results were contacted to complete a short list of questions about their responses. These questions were asked verbally by one of this paper's authors either by telephone or email and the responses recorded then transcribed. These transcripts were then coded to evaluate the responses used to describe the interviewee's feelings towards online courses and to determine if any trends in sentiment exist. Once evaluated, the findings from this aspect of the procedures will be discussed at length in the analysis section as well.

The coding process was conducted exclusively by one of the listed authors of this paper, instead of being a combined effort by two or all of us. The logic for such an action was to minimize the number of differences in coding the interviews, which could have potentially resulted in responses being coded differently even though they might been the same thematically or conceptually. This also minimized the need to conduct inter-rater reliability between interview transcripts that were coded by two different individuals conducting process of coding since it was completed by a single individual and thus, uniform. There was the concern of bias on the part of the coder but the coded interviews were later examined by the remaining authors to ensure that the choices accurately reflected the responses and meaning provided by the respondent. The results and choices regarding the coding process are described, examined and analyzed further in the analysis section of this paper.

Analysis

The primary means for evaluating student satisfaction in the context of this study was a web-delivered survey utilizing Qualtrics. The survey was sent out to all of the distance students taking courses in the department of Learning Technologies with a total of thirty-four students participating in the study. From a demographics perspective, the participants were predominantly white (seventy-four percent -- Figure 1.), male (fifty-six percent -- Figure 2.), mid to late twenties (twenty-six percent -- Figure 3.) and all were pursuing a graduate degree (seventy percent were masters students and the rest were in the doctoral program). Most importantly, nearly all of the participants (eighty-two percent) were taking two or more online classes; this implies a familiarity with this method for delivering course instruction.

The survey results also provided some context as to what drives student satisfaction in an online course from the perspective of course structure and importance of interaction/ rapport between students and instructors. Sixty-eight percent of the participants prefer online courses

that are fully online or asynchronous, which places much importance on the communicative elements of a course. The survey supported this notion by highlighting a desired response time for virtual responses as twenty-five of the participants (seventy-three percent) felt that this style of rapid communication was either "definitely" or "very" important (which were the top selections on the Likert Scale). Moreover, most participants (eighty percent) felt that having similar career goals was "somewhat" or "definitely" important to community building as was the comfort level of being an online student (twenty-four participants felt this was "definitely" or "very" important).

As the questions used to create the primary instrument (survey) are relatively unproven, it is best to examine these questions from a reliability perspective. While there were roughly forty-four questions (including the demographic questions), the cluster of questions that were utilized for this quantitative analysis was questions twenty-three through twenty-eight. The aforementioned questions that were isolated and examined in this analysis deal with the subject of asynchronous/ synchronous learning environments; online learning technologies and rapport, the remaining questions will not be discussed further in this paper. The reason for the removal of these questions is that they do not pertain to the purpose of this paper and will be removed from the instrument in future incarnations of this study.

The first step for analyzing any instrument is to determine if said instrument is reliable, to obtain the reliability of the questions; specifically, twenty-three through twenty-eight, a reliability analysis was conducted to calculate the Cronbach's Alpha. The results of the reliability analysis revealed that all of the questions (all thirty-one of them) were deemed reliable because of their Cronbach's Alpha. Specifically, these questions had an alpha of .866, which is considered reliable because the alpha falls within the following range that has an "internal consistency that is considered to be good" (SEC7, n.d.). Once the alpha was calculated, a factor analysis was completed to create the factors that will act as the scales to measure which factors affect student satisfaction towards online learning, technology and rapport.

The ensuing factor analysis resulted in the creation of three factors that discuss the subjects mentioned in the previous paragraph. The factors created in this process were composed of questions related to online learning environments, online technologies and rapport, questions that fell beneath the .500 threshold on the Rotated Component Matrix in SPSS were excluded from the three factors for this study. Once the factors were established, they were converted into scales by calculating the means of all the questions in each of the factors, this allows for a comparison of the means in an ANOVA. Specifically, Muller (1991) describes the purpose of this process as "a continuous response variable is examined to assess whether it is related to a categorical predictor variable." The comparison of means or ANOVA requires both the constructed factors and a dependent variable to determine the significance of the relationship between the two, the dependent variables in the two ANOVAs conducted for this paper was the demographic information of age and gender.

The use of demographic information such as age and gender provides context to what might affect student satisfaction levels on the subjects of online learning environments, online technologies and rapport. With age as a dependent variable, the levels of significance for online learning environments were $p = 0.506$, $p = 0.152$ for online technologies and $p = 0.792$ for rapport. The significance values for these factors revealed that age does not appear to significantly affect a student's satisfaction towards these aspects of online learning. As for gender, the p values were .124 for online learning environments, .638 for online technologies and .093 for rapport. A cursory examination of these ANOVA reveals that gender has a noticeable impact of the p values but it is not significant relationship between the scales and the dependent variable.

The use of the standard deviation and mean from the ANOVA were used to calculate the Cohen's d/ effect size and to complete an unpaired *t* test. Cohen's d will measures the effect size to determine "sizes of associations or the sizes of differences" in the groups being compared, in this case, gender and the three scales created earlier. According to Cohen's d, gender has a medium 'effect size' ($d=-0.5182$) and implies that gender might have an impact on it, whereas gender has minor or small effect on online learning technologies ($d=-0.1426$). The final scale online learning environments falls right between the two effect sizes with a d value of -0.4379, which also makes it seem that there is a medium effect from gender on the reception of online learning environments by the participants. To understand the statistical significance of these Cohen's d values, unpaired *t* tests were completed to assess whether there is a statistically significant relationship between gender and the three scales. The *t* tests revealed that gender does not
have a statistically significant relationship with online learning environments ($p = 0.1235$), online learning technologies ($p = 0.6386$) or rapport ($p = 0.0930$). There are many reasons for a lack of statistical significance between the dependent variable and the scales, further studies will need to be conducted to better understand the cause (instrument questions or number of participants) for the lack of statistical significance and how to remedy them.

Another ANOVA was completed to address the survey results from different demographic context and sought to determine if age affected any of the scales. While the ANOVA regarding age (both young and old) was not statistically significant from the perspective of the following scales: Young -- online learning ($p = .863$) and rapport ($p = .048$) or rapport ($p = .962$) and online learning technologies ($p = .544$) for older participants. While most

of the ANOVA results involving age were not significant, age with regards to online learning technologies is significant with a p value of .048. This was interesting as it runs contrary to the impression of younger individuals and technology but requires other studies to further understand the cause for this significance and the true impact that age has on the reception of online learning technologies. The other statistically significant relationship was the impact that age has on online learning ($p = .041$), this significance also requires further studies to truly understand this impact.

The results from the ANOVA were then used to calculate the effect size and unpaired *t* test to obtain the statistical significance of this relationship. The effect size values for examining a relationship between the age and the online learning technology scale did reveal a 'large' effect size ($d=9.02854$), which leads one to believe that the age of the participant (young versus old) may impact their opinion of online learning technologies. When looking at the other two scales, rapport and online learning environments, there was a 'small' effect size ($d=0.2479$ and $d=-0.3148$ respectively), which explains that age might not impact the feelings of the participants towards these scales.

Ultimately, the information obtained from the effect size calculations was then used to conduct *t* tests to determine if the differences between age (young and old) of the participants are statistically significant. The results show that there is not a statistically significant relationship between the age of the participant and online learning environments ($p = 0.2986$), rapport ($p = 0.4378$) and online learning technologies ($p = 0.4017$). These results should be considered as a basis for examining the causes for the lack of statistical significance in future studies. Namely, it might be best to increase the number of participants and also refine the set of questions to maintain the reliability of the instrument but also accurately measure the attitudes towards the scales evaluated in this survey.

To build off of the survey results, a secondary instrument was implemented to better understand the responses that were provided to the original study instrument. This instrument, an interview, was delivered by phone and involved three of the thirty-four participating students (The merits for the inclusion of the qualitative instrument will be discussed further in the discussion section of this paper). The interview was comprised of five questions that sought to address the sub-questions regarding online versus face-to-face instruction and synchronous/ asynchronous course elements. Furthermore, the questions selected for this interview provided the interviewer with some flexibility to ask follow-up questions should the responses warrant it. The qualitative method that was utilized for evaluating and coding these responses was naturalistic inquiry. Naturalistic inquiry is defined as a methodology, which places an emphasis on "understanding and portraying social action" (Schwandt, 2007). With regards to investigating the interview results, the participant's responses were also coded using evaluation coding which "assigns judgments about the merits of a program and how to improve them" (Saldana, 2009, p. 97).

The reason for utilizing naturalistic inquiry from a methodological perspective offers the best insights for evaluating a student's attitudes towards synchronous and asynchronous education at an emerging research institution in the southwest. For all intents and purposes, a survey can be considered very one dimensional in its assessment of the participants attitudes towards the subject presented in this instrument. Qualitative research methods such as naturalistic inquiry provide a researcher an added tool for understanding the responses, mindset and in this case, the attitudes of the participants towards subjects addressed in the aforementioned survey. For instance, this qualitative approach was selected to provide context to the responses obtained that would not be present from the survey given to the students alone.

The use of a secondary instrument, an interview, was used to glean context or an added dimension to the responses given by participants after completing the initial survey about their respective experiences with online education. The process for obtaining these responses was by having the participants volunteer their time roughly fifteen to thirty minutes to answer additional questions to flesh out answers on the survey questions. The interview instrument was composed of roughly five questions that were open-ended to elicit responses that were longer than a simple "yes" or "no." The interaction between researcher and participant was recorded in a digital format to simplify the transcription process that would be completed once recordings for all of the volunteers were obtained, they would be transcribed to isolate similarities in their responses.

The individuals who agreed to participate all have had experience with taking courses in online learning environments and could be considered working professionals in addition to taking courses online at the institution described in this paper. There levels of experience overall were varied with one being relatively new to the process of learning in this manner, whereas the other participants had taken courses at both the undergraduate and graduate level prior to this study. In many ways, these experiences and current professional obligations would influence the responses that they provided to our interview questions. Specifically, the fact that these students worked full time while attempting to obtain a graduate degree would influence their sentiment towards aspects of the online courses in this program, such as the technology employed in the course, the structure or the methods utilized by the instructors to teach students online. Aspects such as these as they relate to these participants of the interview process allow for a better understanding of their temperament prior to the coding of the transcripts, which in turn allow for greater insights into their responses as well.

Once the coding of the interview transcripts was completed, the three transcripts were reviewed to determine if there were any similarities that reveal the influence that impacted student satisfaction with our participants. One of the foremost similarities between the interviewees was the cause of negative responses such as the categories of technology, communication and interaction. The coded responses that describe these categories were relatively similar as well. For instance, the interviewee might feel that the interaction in online classes affect satisfaction because the participant has to "wait and wait," is "not as good" or is "irrelevant interaction" in their particular online courses. One of the more mixed responses was the technology utilized in both synchronous and asynchronous course meetings, which was considered a direct cause for influencing the satisfaction levels of the student both positively and negatively. According to the transcripts that were coded, technology allowed for greater "group meetings" (greater collaboration) through technological means such as a "microphone, audio and video." Conversely, two of the interviewees felt that the technology could be a detriment to an online course, if the structure is "unorganized" or is "not working" as it was planned.

Interestingly enough, the main determinant of the interviewees with regards to their satisfaction was the course structure and interaction with the professor or their peers. Specifically, all of the interviewees provided negative comments because of "irrelevant interaction (between students and faculty)," synchronous meetings that were "not instructor led or of no benefit" or synchronous interaction that does not work because it did not "accommodate the majority." In the end, the survey and interviews illustrated that several factors (scheduling, technology and interaction/ communication) could cause student satisfaction to drop, while also affecting their preference for course type (online or face-to-face), rapport/collaboration between peers and preference towards meeting types (synchronous or asynchronous). Ultimately, the significance of these factors as they relate to student satisfaction will be discussed in the conclusion of this paper.

Discussion

After analyzing the results of this study, it is clear that there were some inherent limitations to the structure for how the study was conducted. Foremost, the size of the participant pool (those students who completed the survey) was not representative of the amount of students within the program and most importantly, nor was the amount of students willing to be interviewed for the study. To resolve this issue in future studies; this particular study could be expanded to include students taking online courses in other academic departments at the participating university. This would greatly increase the number of potential participants in the study, which would increase the amount of responses that would be received. Moreover, an increase of responses would provide greater insight into the levels of student satisfaction at an institution of higher learning that would be more generalizable than the participant pool used in this study.

Another possible limitation of this study is the number of interviewees that participated in the follow-up interview to the initial survey provided to students in the department of Learning Technologies. Specifically, the sentiment conveyed by the three participating interviewees (out of the total thirty-four participants) would not be considered representative of the participating population in this study. This could be misconstrued, as weakness because of the lack of representation from this study's participants; however, there is much that can be gleaned from this qualitative method. Certainly, it still allows for a further understanding of several participants responses to the survey but it also demonstrates the process /purpose for its inclusion in this paper. Moreover, the research study described throughout this paper was a pilot study used to evaluates the aspects that affect student satisfaction in online courses from the perspective of the medium (online courses), asynchronous instruction and rapport/ collaboration among students, the inclusion of the qualitative instrument is relevant even if it is not generalizable with the remaining population of participants. To remedy this perceived deficiency and the lack of generalizability from a qualitative perspective, there would be a greater pursuit of potential interviewees when the survey is given to a larger pool of participants. Ultimately, it is believed that a greater percentage of interviewees with yield result in future version of the study that could be applied to a larger context.

One consideration that will be implemented in further versions of this study is to include questions that provide perspective of a student's experience with online course offerings. This is a recommendation that removes a distinct limitation to this study. Namely, it was mentioned earlier that it was implied that the student participating in the study had experience with online courses since they were taking more than one course at the present time. The importance of finding out a student's prior experience with online courses is that allows the researcher to fully understand their position but also insures that the insights provided by the participant span the satisfaction spectrum. Specifically, it is important to know that their experiences have a basis for comparison and are not based off of just one experience with this method of course delivery. To isolate individuals whose experience with online courses has been limited to one course, a question will be added to future versions of the survey that explicitly ask the number of online courses that the participant has taken.

The most vital element to any study is the instrument used to measure something; in this case, a survey was used to measure the participant's feelings towards online instruction. For this study, an instrument was created for the purpose of measuring these attitudes

and in retrospect this newly devised instrument might contain some inherent limitations. Foremost of which, it is a completely new instrument that was created for this study to evaluate several aspects of asynchronous/ synchronous online education such as student-instructor interaction, student rapport and the use of technology in a course. As was discussed, the results from the questions utilized, there is some limitations inherent to an unproven set of questions devised. To address these limitations, future studies will be conducted to reduce the number of questions to include only those questions that were relevant and deemed reliable in future incarnations of this study.

Ultimately, this study is considered to be a mixed-method study containing two methods (quantitative and qualitative) for examining the participant's attitudes as they relate to the research question of this paper. Namely, how did the participant perceive the medium for delivery of courses, the impact of asynchronous instruction on their satisfaction and the role that rapport/ collaboration plays amongst students in online courses? Of course, this does allude to a preference of one over the other; however, these methods mutually complement each other. While the quantitative method provides a concrete basis by which the participant's attitudes are measured, the qualitative process of interviewing participants allows the researcher to better understand the data obtained with the survey. In many ways, this makes the quantitative method the primary method by which the data was analyzed and the qualitative acted in a secondary role that complimented the data received upon the completion of the survey with context in those results.

In general, none of the aforementioned limitations reduces the applicability of this study since it seeks to provide context about a specific section of the student population at the participating research institution. Furthermore, studies about student satisfaction with regards to online courses are important as the amount of online course offerings continue to increase at institutions of higher learning. Ultimately, these limitations could conceivably be remedied in future incarnations of the study and most importantly, allow for a greater understanding of student satisfaction on a larger scale. By further understanding an online student's level of satisfaction towards these courses, it is possible to create an offering, which maximizes what the student finds enjoyable while minimizing that which is viewed as a weakness.

Conclusion

As society continues to become more technologically centered, it is only logical that education would expand into the digital realm. In addition, the response to this expansion has been overwhelmingly positive as individuals continue to enroll in online courses. The question remains about how to improve student satisfaction in online courses and what aspects affect it. Throughout the course of this paper, student satisfaction was examined through the lens of disposition towards the medium, asynchronous learning and the methods to promote rapport and collaboration.

While insights provided by the literature examining the topic were useful, the firsthand information obtained through the survey of online students in the University of North Texas' Learning Technologies program allowed for a practical investigation of the research question. In particular, student satisfaction and their preference for online courses is determined by the usage of technology, communication and interactive elements. The interview portion of the research study reinforced the importance of these three elements on an online student's satisfaction levels. If providing the survey to other departments at this emerging research institution and more interviews conducted pursued this research study further, the anticipated results would likely be reminiscent of the findings of this study. In the end, subsequent studies conducted on a larger scale would allow the researcher to possibly utilize the participant's responses to create more engaging and satisfying online instruction.

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