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Student Perceptions of Online Learning: Discussion Board Assignments

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Abstract

Background: Online education has experienced unparalleled online expansion in recent years. Quality design and course preparation has become increasingly important with the growth of technology-enriched instruction.

Purpose: The study's purpose was to increase understanding about what students perceive to be worthwhile discussion board assignments to improve both teaching strategy and instructional design for online courses.

Methods: Qualitative content analysis was used to analyze student responses to three open-ended questions about discussion board assignments. Data were collected through an online survey ($N = 45$) during three different semesters.

Results: Student participants reported the importance of sharing, peer insight, and topic relevance. Student-student and student instructor interaction within the discussion board assignment were also important.

Conclusions: The results of this study indicate the importance of continued educational research regarding specific teaching strategies, facilitation techniques, teaching presence and student perceptions of meaningful discussion in asynchronous online discussion board forums.

Keywords: online learning, discussion board assignments, student reflections, qualitative content analysis

Student Perceptions of Online Learning: Discussion Board Assignments

Introduction

Many higher education institutions are offering more courses online to meet student demand. Over the past decade, there has been a shift from the mindset that online learning is less rigorous than face to face instruction, to the realization that online education is time consuming for both the instructor and the learner (Braid & Abdulla, 2014; Olson & Benham-Hutchins, 2014). Quality instructional design and course preparation requires effort from the online instructor; likewise, the online learner has come to understand online education involves challenging work (Palloff & Pratt, 2007). Research has suggested quality online instruction, taught using strong pedagogical principles, results in satisfied students who meet stated learning outcomes (Tichavsky, Hunt, Driscoll, & Jicha, 2015).

Nursing education has also experienced online expansion (Braid & Abdulla, 2014; Olson & Benham-Hutchins, 2014; Salani, Albuja, & Azaiza, 2016). Recent growth in online nursing education is thought to be due to the call from the Institute of Medicine's 2011 report, *The Future of Nursing: Leading Change, Advancing Health* to provide accessible, affordable, and portable educational opportunities for nurses nationwide as a means for improvement of healthcare throughout the United States (Mann, 2014). Over 100 online nursing educational programs were ranked in a *U.S. News & World Report* publication (Best online graduate programs, 2016). This list represents merely a fraction of the online nursing educational programs being offered nationwide. The expansion of online course offerings has amplified the need for nurse educators to learn effective online teaching strategies.

A challenge online teaching has created, for the nurse educator, is the increased text-based instructional communication within the online environment (Olson & Benham-Hutchins,

2014). Decreased verbal communication among learners and educators makes it difficult for the nurse educator to model the art and science of nursing to student as part of the educational process (Mann, 2014). Continued research is needed to improve instructor understanding about the best teaching strategies to model the art and science of nursing through the modality of online education. This paper describes a qualitative study examining student reflections about discussion board assignments in an online graduate nursing program.

Literature Review

Nationwide, a growing number of schools have implemented learning management systems to deliver online education. *Blackboard Learn* has become one of the most prevalent among the many learning systems available (The top 20 most popular LMS software, 2015; Coaplen, Hollis, & Bailey, 2013). Within *Blackboard Learn*, a popular means of student to student and student to instructor interaction is the discussion board forum. These forums provide a means for asynchronous student discussion meant to mirror the experience of a face-to-face classroom. The asynchronous format requires valued pedagogical technique and instructional design to provide comprehensive learning opportunities for student interaction (Anderson, Poole, Quinn, & Schlicht, 2014).

Online Discussion Board Assignments

One framework commonly used in higher-education discussion board research is the Community of Inquiry (CoI) framework (Garrison, Anderson, & Archer, 2000). The CoI model describes cognitive, social, and teaching presences. Cognitive presence occurs when learners create meaning through reflection and dialogue. Social presence happens with purposeful communication in a trusting environment. Enablement of both cognitive and social development to ensure student learning outcomes is considered as teaching presence (Garrison, Anderson, &

Archer, 2000). Research using the CoI framework related to discussion board forums has ranged from quantitative analysis of cognitive, social, and teaching presence to qualitative investigation of the content of instructor's comments (Clarke & Bartholomew, 2014; Pollard & Kearney, 2017; Minor, & Swanson, 2014). Generally, it is assumed all three CoI presences must be present for a student to feel as though a positive teaching experience has occurred (deNoyelles, Mannheimer Zydney, & Chen, 2014). Xin (2012) stated the three CoI presences cannot be examined independently. Since discussion board conversation typically follows the same flow as a face-to face conversation, cognitive, social, and teaching presences are intertwined. As a result, teaching strategies integrating all three CoI presences are recommended to successfully moderate an online discussion board (Clarke & Bartholomew, 2014; deNoyelles, Mannheimer Zydney, & Chen, 2014; Xin, 2012).

Palloff and Pratt (2007) argue academic excellence should be the driving force for all online education. Threaded discussion board assignments offer students an opportunity to interact in a relational way. Asynchronous discussion boards provide a venue for student collaboration in the online environment (Hall, 2015). Although other research has indicated the use of synchronous online discussions contributed to higher levels of cognitive presence (Molnar & Kearney, 2017). Most importantly, authentic dialogue in online discussion board forums has been found to meet the needs of adult learners (McDougall, 2015). However, knowing how to best facilitate online discussion board forums to ensure relational and authentic student interaction can be a frustrating experience for both the novice and seasoned instructor (Curry & Cook, 2014). There are contradictory research results about the most effective way to form a cohesive learning environment with the use of online discussions. The importance of instructor moderation is generally accepted, but exactly how much instructor involvement is needed is a

subject of continued debate (Clarke & Bartholomew, 2014). It has been reported students do not view online discussions as similar to in-class discussions; yet, other research supports that online discussion does support learning when there are characteristics of a community of inquiry present (Tichavsky, Hunt, Driscoll, & Jicha, 2015; Rubin & Fernandes, 2013).

Hall (2015) also noted the conflicting research present in the educational literature concerning the relationship of discussion board assignments to student critical thinking skills. A systematic review of online discussion board higher education research noted a potential relationship between the quality of an online discussion and the achieved level of critical thinking by students (Zhou, 2015). Other recently published research indicated a statistically significant difference of weighted cognitive level scores when student responses in an asynchronous discussion board forum were compared to student responses in a synchronous discussion board forum (Brierton, et al., 2016). More research about the connection of a particular discussion board teaching strategy to student learning outcomes is needed for issue clarity.

Related Nursing Research

This conflicting nature of the previously reviewed research about best teaching strategies for online discussions is further complicated by the paucity of related nursing educational research. Using Walker and Avant's concept analysis process, Olson and Benham-Hutchins (2014) defined nursing student learner presence to be "the incorporeal perception of the student, sensed as being social, intimate, relational and interactive in a virtual learning environment" (p. 1). This definition of presence is in line with the CoI framework. However, the only recently published nursing educational research discovered to have incorporated the use of the CoI

framework, for discussion board pedagogical research, dealt with the use of Skype software for synchronous face-to-face discussions in blended online courses (Stephens & Hennefer, 2012).

Other nursing education researchers have critically examined aspects of the use of discussion board assignment in the online classroom. Breen (2014) completed a qualitative study analyzing discussion board transcripts looking for evidence of collaborative learning. Bristol (2018) discussed the potential use of discussion board assignments to advance learning in the face-to-face classroom, the clinical environment, and the laboratory. Other nursing education research related to online discussion boards involved the creation and psychometric testing of two different standardized grading rubrics (Pecka, Schmid, & Pozehl, 2014; Phillippi, Schorn, & Moore-Davis, 2015). Lastly, Vertejee (2015) studied discussion board postings to understand student perceptions and observations about elder abuse during a clinical rotation course.

Additional nursing educational research regarding specific teaching strategies, facilitation techniques, teaching presence and student perceptions of meaningful discussion, in asynchronous online discussion board forums is needed. In summary, as nursing educational offerings continue to grow; knowledge of the best practices to effectively moderate discussion board assignments are important. An initial step towards learning more about this issue is to examine the issue from the perspective of the student. The study's purpose was to increase understanding about what students perceive to be worthwhile discussion board assignments in order to improve both teaching strategy and instructional design.

Methods

Design

This study was designed to gather data from students to advance online pedagogy connected to discussion board assignments. The researchers qualitatively analyzed student responses to three open-ended questions related to learning experiences, instructor involvement,

and grading practices for discussion board assignments. Data were gathered over two years. The study design was retrospective qualitative data analysis. An anonymous survey was deployed to gather data from graduate nursing students enrolled in a required leadership course.

Qualitative content analysis (QCA) is a valid research method for describing the meaning of qualitative data in a systematic way (Krippendorff; 2013; Schreier, 2012). Krippendorff (2013) defines QCA as “a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use” (p. 24). Schreir (2012) offers a checklist to determine if QCA is appropriate for data analysis. Meaning is not assumed in QCA, it is constructed. The QCA method supports the researcher’s interpretation of the participant communication, to decipher meaning.

The following survey questions were asked of the student participants:

1. Describe a positive learning experience you have had with a discussion board (DB) assignment.
2. What amount of instructor involvement do you think works best within the DB?
3. What total percentage should the DB assignments count for in your final grade? Why?

Sampling and Participants

The sampling strategy for this study was convenience methodology. All participants were students enrolled in a completely online graduate nursing program. The survey was deployed once a year, during a core course, to avoid duplicate responses. In total, 45 students ($N = 45$) completed the three-question survey; with 31 of those participants answering the entire survey (68.9% total participation rate). The 14 remaining participants did not answer one or more of the questions on the survey; however, information from the partially completed surveys was included in the qualitative content analysis.

Data collection procedures

Students enrolled in an online course were asked to complete a researcher created, online survey posted within the course's *Blackboard Learn* site. The anonymous survey was deployed in three consecutive spring semesters in one core course to prevent duplication of responses. A survey link, including an explanation of the research, was sent to each prospective student participant enrolled in the course. The initial invitation to participate was followed by two subsequent reminders, sent one week apart. The survey link was made available only during the last four weeks of the course. Participation was completely voluntary and anonymous; therefore, demographic data about participants is unavailable.

Data Analysis

Qualitative content analysis (QCA) was the method used for interpreting the meaning of the data derived from the three open-ended survey questions. The study data meets the criteria for the use of QCA, through its rich data requiring interpretation, the visual or textual nature of the data, and the method by which the data was collected. The textual data from the student responses to the survey questions were analyzed after data collection. All responses were printed for each survey question. Each response was segmented into individual thematic units.

Researchers analyzed data as both individuals and together as a team. After completion of the analysis, researchers created and named categories or clusters of themes based on similarities among the data and sorted the thematic units into named categories. An effort was made to ensure each main category represented only captured one aspect of the qualitative material. Each student response was placed into only one category.

Support for the trustworthiness and validity of the data analysis is provided through the inclusion of direct quotes from participants representative of each category. Researchers

structured the student responses in a data-driven way, letting the categories emerge from the material. Dependability of the results was achieved through allowing adequate time to thoroughly analyze the qualitative data and by working with and reporting responses as direct quotes. Member checking or other type of review of findings with study participants was not possible due to the anonymous data collection procedures used in order to protect the confidentiality of individual student's comments.

Ethical Considerations

The study was approved by the university's Institutional Review Board (IRB). Results of the survey were anonymous ensuring participant confidentiality. Participation was completely voluntary, and the researcher was unaware of the identity of the students choosing, or choosing not, to participate in the survey.

Results

Content Analysis Categories

In conducting content analysis of the data obtained from the three open-ended question survey, several categories emerged. The identified categories for questions one and two are described in order of frequency, from those with the greatest number of participant responses to those with the fewest, in Tables 1 and 2 respectively.

Survey Question One

Analysis of the student responses for question one (Describe a positive learning experience you have had with a discussion board (DB) assignment), resulted in an overall categorization best labeled as interaction. The student responses described how some type of interaction led to their most positive DB learning experience. Relationship to professional experiences and to other students as well as a connection to the discussion topic were all

emphasized within the student comments. The four categories that emerged from survey question one can be reviewed in Table 1.

Table 1

Frequency of participant responses for the content analysis categories from survey question one (n = 37)

Categories	Number of responses
Sharing of professional practice experiences	18
Insight from peers	10
Topic relevance	6
Student selection of discussion material	3

Category: Sharing of professional practice experiences. Overwhelmingly, the surveyed students felt that sharing professional experiences resulted in the most positive discussion board learning experiences. Student quotes representative of this category:

“My favorite DB’s are when I am asked to reflect on something in my personal practice, an experience to share about.”

“I have really enjoyed how at times we get to explain a personal experience we have encountered and how we handled the situation and then incorporated with the topics in the unit.”

Category: Insight from peers. Another student commented on the positive opportunity provided by reflection upon their own professional practice after reading the remarks of other students with diverse backgrounds and different capacities of professional expertise:

“I enjoyed doing the discussion boards it has provided me with insight from my peers from different nursing backgrounds. I enjoyed the thought-provoking questions to get me out of my box or way of thinking.”

“I enjoyed learning from my fellow students. It allowed me to see insights which I may not have gained on my own.”

Category: Topic relevance. Students stated DB assignments were most meaningful when the topics were related to either course content or current events:

“The best discussion board assignments in my opinion are the current events/opinions/interesting/topics. The students should post topics that are interesting to them, then the professor should choose whatever topic that is related to the course of study. I think that it is repetitious to post in discussion board the assignments on the Unit of Study.”

“I think that was during your ethics class that I took. The case studies that were assigned as DB questions really made me think of my profession and the role of the nurse leaders.”

Category: Student selection of discussion material. Another student indicated a positive learning experience involved input into the discussion topic:

“The best discussion board assignment was when we had to create our own questions on the chapters. It provides a meaningful thought process when it comes to understanding the readings.”

Survey Question Two

Analysis of the student responses on question two (What amount of instructor involvement do you think works best within the DB?) resulted in a range of preference for instructor involvement within the discussion board forum. Three categories emerged about the amount of instructor involvement in the DB: initial involvement, feedback validation, and no instructor involvement. The three categories that emerged from survey question one can be reviewed in Table 2.

Table 2

Frequency of participant responses for the content analysis categories from survey question two (n = 31).

Categories	Number of responses
Importance of initial involvement from the instructor	15
Instructor feedback provides validation	12
Instructor involvement not necessary	4

Category: Importance of initial involvement from the instructor. Initial instructor involvement was described as necessary for participant encouragement and direction of the conversation. Quotes representative of this categorization:

“In my opinion faculty should encourage class participation and serve as the discussion initiator.”

“I believe that in the beginning it is wise for the faculty to be involved to try and direct the students, into what she/he expects for the discussion boards.”

Category: Instructor feedback provides validation. Many student comments indicated the importance of instructor feedback to validate the worth of their postings. Some examples:

“Providing feedback is essential, sometimes I felt like my comments were not read. I like when the instructor is involved in the discussion board topics and I like the feedback by the instructor.”

“I like to see feedback from the instructors because then you notice that they really take the time to read your post and it's just not busy work for us.”

Category: Instructor involvement not necessary. Conversely, other students indicated instructor involvement in the DB to not be necessary. Some student quotes about unnecessary instructor participation:

“I don't believe that faculty involvement is necessary, but I will say that I do like to read posts from the faculty.”

“I feel that the discussion board is designed solely for student participation.”

Survey Question Three

The last question of the survey (What total percentage should the DB assignments count for in your final grade? Why?) involved student reflection about their experience with grading practices for DB assignments. The students were asked to state a percentage number they considered to be fair for the DB assignments to weighted in the final course grade. Moreover, the students were prompted to explain the percentage number they provided. The data gathered from

this question was not suitable for qualitative content analysis since most respondents merely stated a number with no additional explanation or rationale. However, some students did offer reflective statements, worthy of report. Note the discussion board assignments counted for 20% of the final grade in the course in which this survey was deployed. One student offered the following comment:

“This question is tricky because it depends on the course and the number of discussion boards per course.”

Another student, who expressed DB assignments should count for 40% of the final grade, stated:

“I personally think that the discussion board assignment grade should be more heavily weighed because of the amount of time it takes when conducting research to answer and reply to the questions.”

As a significant point, the students were nearly evenly divided in their responses in terms of what percentage of the final grade DB assignments should be weighted as represented in Table 3.

Table 3

<i>Discussion board assignment percentage of final grade recommended by students (n = 39)</i>		
<i>Less than 20% of final course grade</i>	<i>Equal to 20% of final course grade</i>	<i>More than 20% of final course grade</i>
13 students	12 students	14 students

Discussion

Interaction

The first survey question results indicated the importance of student-instructor interaction. This outcome was expected and agrees with published literature. Interaction is thought to be the most critical component of effective online teaching, regardless of the format in which the interaction takes place (Ebrahimi, Faghih, & Dabir-Moghaddam, 2016; Tichavsky, Hunt, Driscoll, & Jicha, 2015). Without interaction in the online classroom, learner self-education would most likely not transpire (Clark & Bartholomew, 2014). The nursing student

participants in this study indicated a preference for the opportunity to share with other professionals and the chance to engage only relevant topics. The ability to gain insight from the stories of their peers was helpful and to promote higher level thinking.

These results offer direction for further study. Best teaching practices in terms of the type and amount of student-instructor interaction within the DB forum needs improved definition. One potential approach to further research, examining best teaching practices to promote student interaction, would be to expand the use of the CoI framework in nursing educational research. There are several educational qualitative research studies examining the CoI model's cognitive, social, and teaching presences (deNoyelles, Mannheimer Zydney, & Chen, 2014; Evans, Ward, & Reeves, 2017; Rockinson-Szaokiw, Wighting, & Nisbet, 2016; Stewart, 2017). Gutiérrez-Santiuste, Rodríguez-Sabiote, and Gallego-Arrufat (2015) used questionnaires to quantitatively examine student responses in both synchronous and asynchronous DBs. The research results indicated a correlation between social and cognitive presence. Both qualitative and quantitative research seems to support the importance of interaction as a foundation for positive student experiences in the online environment.

These results of this study have implications for the instructional design used in the creation of DB assignments. Research supports the effectiveness of topic relevance in encouraging knowledge construction for students enrolled in online courses (Howell, LaCour, McGlawn, 2017). Della Noce, Scheffel, and Lowry (2014) reported student preference for conversation and dialogue with the DB. One recommendation was for instructors to request students to answer the posted DB question and then to also ask a question of another student. The rationale is this type of back and forth exchange within the DB should more closely resemble

face-to-face conversation and encourage increased student interaction. The result of this type of exchange should provide for a more positive DB experience for the students.

Instructor Involvement

The findings for question two agree with some research findings in the published literature. The category variance in instructor involvement included the following categories: initial involvement, instructor feedback, and no instructor involvement.

Rockinson-Szaokiw, Wighting, and Nisbet (2016) reported a relationship between students' sense of community and perceived learning. Sense of community was measured by CoI constructs and perceived learning was measured by course points earned. Students who reported higher levels of perceived social, cognitive, and teaching presences had higher course scores. In this study, teaching presence was the strongest predictor of course scores. This result would seem to indicate the importance of instructor involvement. Guidance from instructors is believed to have been important within the online classroom, particularly for students lacking in motivation or involvement (Sas, Bendixen, Crippen, & Saddler, 2017).

Other research presented findings of teaching strategies used to encourage increased student responses within the online discussion board. Within an asynchronous DB, it was found that when instructors responded to students using comments from their postings to formulate additional questions, the number of student postings increased (Della Noce, Scheffel, & Lowry, 2014). Brookfield and Preskill (2005) suggested online instructors develop the habit of focusing on student observations rather than expected or required content within DB postings in order to create better conditions for online learning. These study findings are important in that they give some insight into how much and what kind of instructor involvement works best for DB assignments. It also seems to point towards instructor commentary on student postings as

offering important validation. More investigation about what type or kind of instructor feedback is most effective is necessary.

No literature was found supporting the lack of instructor involvement within the DB forum. This result was unusual and needs further validation before any continued exploration of this finding.

Grade Percentage

The results of survey question three were surprising. The nearly even division of participant responses in this study as to whether to increase the percentage, keep it the same percentage, or decrease the percentage of the DB assignments in the final course grade needs further exploration. An, Shin and Lim (2009) found grading of DB assignments provided necessary motivation for student participation (as cited in deNoyelles, Mannheimer Zydney, & Chen, 2014). Rovai (2007) examined the relationship of graded DB assignments to learning outcomes. Study results established student participation improved when the weight of DB assignments went from zero percentage to 10-20% of the final grade. However, student participation did not increase when the DB assignment weight was raised to 25-35% of the final grade (as cited in deNoyelles, Mannheimer Zydney, & Chen, 2014). Research results have indicated the importance of psychometric validation of DB grading rubrics used with graduate nursing students; however, no recommendations were noted regarding DB assignment weighting (Pecka, Schmid, & Pozehl, 2014; Phillippi, Schorn, & Moore-Davis, 2015). The application of valid grading rubrics is effective teaching practice and worthy of further investigation.

Limitations

Study limitations included the use of a researcher-developed survey and the inability to seek clarification of participant responses due to anonymity. Also, the usefulness of reliability

and validity in qualitative content analysis is a matter of degree; therefore, coding frames in QCA cannot be reported as reliable or valid per se (Schreier, 2012). Another limitation was the participants had been enrolled in courses with multiple instructors by the time they enrolled in the course in which the survey was deployed. The dissimilar teaching methods and use of DB assignments from different instructors would naturally affect student responses. Lastly, the study sample size was relatively small, and all the participants were enrolled as students in online courses at the same educational institution.

Conclusion

The results of this study indicate the importance of continued nursing education research regarding specific teaching strategies, facilitation techniques, presence, and student perceptions of meaningful discussion in asynchronous online DB forums. Minimal nursing research related to the study of the CoI model's cognitive, social, and teaching presences was found in the literature. The CoI Survey is a tool known to be valid and reliable for the collection of data about the online presence (Arbaugh, et al., 2008; Rubin & Fernandes, 2013). Its usefulness for designing interactive online learning activities has been established (Stewart, 2017). Perhaps the use of this survey or another valid, reliable research tool could provide beneficial nursing as well as other educational research results regarding best teaching strategies in online learning.

There is also a need for more nursing educational research about the relationship of DB topics to learning. Yang, Newby, and Bill (2005) stated Socratic questioning enhanced critical thinking skills but how this technique might work in the online course needs further analysis (as cited in deNoyelles, Mannheimer Zydney, & Chen, 2014). The relationship of the quality of a question to a student response is also an area in need of more exploration. Ringler, et al. (2015) found a statistically significant correlation between the Bloom's taxonomy level of the question

and student participation. Other research has suggested the need for continued research about what adult learners consider to be authentic discussion (McDougall, 2015).

The use of case studies is yet another area of potential opportunity in nursing educational research about DB assignments. Recently, case study pedagogy was used with groups of business students within an asynchronous DB forum. Findings indicated a gradual growth in the number of student responses with the use of this teaching strategy when compared to a traditional DB question and answer formatting (Seethamraju, 2014). The researchers acknowledged an increased number of DB responses did not necessarily correlate with an improvement in student learning outcomes; nevertheless, the increased numbers of DB responses were thought to be indicative of more student interest and greater focus. Higher order and critical thinking skills might be improved with the use of asynchronous DB assignments (Brieton, et al., 2016; Hall, 2015). The process of reflection, writing, and revising comments, before posting them to a DB forum, progresses cognitive understanding. Overall, the need for better understanding about best practices in online teaching is essential given the anticipated continued expansion of online nursing educational offerings.

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