Does Academic Level Affect Student Perceptions of Threaded Discussions in Online Learning?

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Abstract
This research is a continuation of a study that examined students' attitudes and perceptions of the use of threaded discussions in online courses. The focus of this particular study was on the present academic level of the student and their perceptions of the various aspects of threaded discussions in online learning. University students from the freshman level through the doctorate level were included in the data examination. Results indicate that students' at all academic levels generally enjoy engaging in the required threaded discussions but are somewhat neutral about their effectiveness and usefulness. In addition, when an option between a written assignment or a threaded discussion, all academic levels showed a clear preference for threaded discussions. When confronted with the option of taking a course in either the traditional, face-to-face format or online, a definite preference was shown for the traditional face-to-face course format. However, there was strong evidence that the present academic level has an effect of the students' perceptions of online learning in general and specifically their perceptions of threaded discussions.

Keywords: Academic Level**,** Online Learning, Asynchronous, Threaded Discussions, Traditional Coursework, University Students.

Reference to this paper should be made as follows:

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INTRODUCTION

The demand of online degree programs has increased in popularity in the United States. In fact, within the United States, 6.9 million students enrolled in at least one online course in fall 2012—an increase of more than 500,000 students compared to 2010. At least 32% of all college and university students have taken an online course (Bird, 2014). A 2011 survey by the Babson group (2012) indicates that academic leaders believe that the level of student satisfaction is equivalent for online and face-to-face courses. At this point over 65% of higher education institutions now say that online learning is a critical part of their long-term strategy.

This study examines the similarities and differences in the attitudes and perceptions of university students at various academic levels (freshmen-doctoral) with regard to threaded discussions in fully online courses. A number of online course teaching faculty find that many students who may be very quiet in a classroom may be very participatory online if given the time to thoughtfully respond to questions. In many Learning Management Systems (LMS), this is achieved through asynchronous applications like threaded discussions. Threaded discussions may be used across content areas to promote critical thinking and reflection outside of the typical 40 to 60 minute domain constraints of the regular classroom. Threaded discussions can provide virtual learning connections that transcend class hours and provide a dynamic, dialogic learning environment where students reflect, collaborate and discuss real-world issues (Rizopoulos & Mccarthy, 2009).

LITERATURE REVIEW

Although there is a considerable amount of research on online learning and threaded discussions, very little was found on academic levels and threaded discussions. However, some interesting and related studies were found that added to the scope and focus of this study. It has been well established from the early days of online learning that students who actively participate in the learning process learn more than those who do not. Tinto (1997) indicated that learning can occur both inside and outside the classroom—even if it is an online classroom. Kassop (2003) suggested that student learning in threaded discussion equals or even exceeds that of traditional, face-to-face courses. Additionally, this study indicated that highly reflective threaded discussion can contribute to the high quality of discourse which can often surpass classroom discussions.

The focus of this study was three pronged. The researchers wanted to examine if university students, at the various academic levels, enjoyed threaded discussions and felt positive about their contributions to learning in the fully online format. The second area of focus was the amount of time devoted to completing and posting their responses to threaded discussion related assignments. The third area of interest was the students' willingness to take online courses that had a high level of threaded discussion related coursework. In addition, given the option, would they prefer the same course in the online format or the traditional face-to-face format?

Do students at the various academic levels enjoy and learn from threaded discussion in an online course?

In a focus group study conducted by Burton & Goldsmith (2002) most students indicated that challenges and restrictions in personal schedules made online courses appealing, including the convenience of not having to be on campus during the week, flexibility with personal commitments, and ability to take courses around work schedules. A study by Vella (1994) states, "The dialogue of learning is between two adult subjects: teacher and student. This dialogue does not change in online classrooms. If anything, dialogue, operationalized as active participation in the virtual classroom, becomes more important."

A number of studies report that asynchronous threaded discussions allow the students the opportunity to ponder, investigate and question prior to responding. In addition, the online format removes the peer-pressure and self-consciousness that can often hinder a regular classroom discussion. The sometimes, faceless environment of threaded discussions encourages active inclusion and engagement of all students (Murchu & Muirhead, 2002). A study that looked at student satisfaction (Cole, Shelley & Swartz, 2007) found that overall, students rated their online instruction as moderately satisfactory, with hybrid or partially online courses rated as somewhat more satisfactory than fully online courses. "Convenience" was the most cited reason for satisfaction.

How much time do students at the various academic levels spend on the preparation and completion on online threaded discussion assignments?

A study by Arbaugh (2004) found that the average student will spend approximately one hour each week reading the text of the discussion. This assumed that it takes fewer than two hours to compose initial messages and responses to the discussion prompt. The researchers concluded that the time commitment for participatory activity is similar to that of traditional, face-to-face courses. A number of students indicated that they get better at working in the online environment the more courses they take, thus reducing time on tasks. In addition the Arbaugh study asked students throughout a four year online M.B.A. program to determine whether or not their perception of online courses changed as they became more familiar with the delivery medium. He found that student perception of online learning became more positive as students took subsequent courses, and that the most notable change came between the first and second course. According to Brown and Green (2009), "a typical, graduate-level, online, asynchronous discussion requires about one hour a week of reading time, and the time commitment for participatory activity is similar to that of traditional, face-to-face courses, given that it takes under two hours to compose initial messages and responses to the discussions prompt." Brown & Green (2009) also reported that the average student will spend approximately one hour each week reading the text of the discussion. This assumes that it takes less than two hours to compose initial messages and responses to the discussion prompt, the time commitment for participatory activity is similar to that of traditional, face-to-face courses.

A research project by Meyer (2003) examined students' preferences for face-to-face learning versus threaded discussions. The students were asked to compare face to face and threaded online discussions. She analyzed responses for higher-order thinking and students perceptions. Students expressed that online discussions took more time, provided the opportunity for more thoughtful and well supported responses, and highlighted writing skills. An overwhelming majority of students, while averse to the additional time commitment, reported the additional 'time to reflect' as an advantage to threaded discussions. Many students preferred the opportunities provided by an online discussion to fully participate as opposed to traditional face-to-face discussions which may alienate participating members for a variety of reasons (Meyer, 2003). Online discussions do not come without opposition; for example, one student in the Meyer (2003) study specifically stated that he or she missed the "facial and hand gestures" that are associated with face-to-face discussions.

In a study by Song, Singleton, Hill and Koh (2004), 76 graduate students were examined to determine the benefits and challenges of online courses. This research included their perceptions of time management and online course preparation. They found that course design, learner motivation, time management, and familiarity with technology lead to success in an online course. However, technical problems, time constraints, lack of community and difficulty understanding course objective were barriers to learning online.

Do university students at the various academic levels have a preference for online course versus traditional, face-to-face courses?

There is some research that suggests that courses delivered online produce at least comparable learning outcomes when compared to traditional classroom-based courses when the instructional methods and requirements are similar (Sitzmann, Kraiger, Stewart & Wisher, 2006).

The focus study by Burton and Goldsmith (2002) found students indicating that they thought online courses would be more challenging than on-ground courses. However, the students in the study were careful to emphasize that the greater challenge should not come from course content; online courses should not be conceptually harder than on-ground courses.

Those students who indicated that online courses are better believed that interaction between student and faculty and among students were better than on-ground. The students in the focus groups who perceived on-ground courses to be better believed that the immediacy of discussion between instructor and student and student to student was more constructive than the delayed discussion online (Burton & Goldsmith, 2002).

When asked for a preference between taking a fully online course and taking the same course in the face-to-face format, most students agreed that taking online courses was beneficial and would consider taking another one. The most common reason for taking online courses was flexibility in scheduling and their responses supported this perceived benefit. Although some students did not believe that online courses was the best choice for their educational needs, but because of the flexibility afforded by online courses, these students will continue their education online (Burton & Goldsmith, 2002). A study by Powell (2007) looked at two different delivery formats of the same graduate course: a traditional classroom setting and an online course. The selected courses contained a mix of synchronous and asynchronous activities. The findings indicated the satisfaction levels among students for both course formats were similar, with slight differences noted in instructor preparation and usefulness of assignments. Powell indicated that the instructor and not the delivery format was the determining variable. Powell advocates an emphasis on assisting online instructors to adapt to new technologies to stay relevant in the distance learning setting.

A combined study (Shelley, Swartz & Cole, 2008) compared students' preference for online versus traditional curse formats. These two studies compared students enrolled in both online and classroom versions of the same business law course, BLAW 1050. In both studies the same professor taught the same course, using the same textbook, the same syllabus and using the same assessments. The first study found no significant difference between the two formats with regard to student satisfaction and student learning. The second study did find statistically significant differences in two elements of student satisfaction: 1) with the instructor and, 2) with the course structure.

METHODOLOGY AND SAMPLE

The original sample for this research consisted of 403 from four selected universities in the state of Pennsylvania. The participants responded to a 23 question online survey developed using Question-Pro. Two of these universities were state-supported schools, one with an enrollment of approximately 7000 students and the other with approximately 15,000 students. The third was a private institution with an enrollment of 6,200 students. The survey was administered to undergraduate classes as well as selected graduate courses and one doctoral class. The completed surveys were compiled and filtered to examine the responses students at various academic levels separately. Only students who had taken one or more fully online courses would be considered for the purpose of this study. After the filtering process was completed and the number of online courses taken had been established, the remaining sample was established; freshman (N=72), sophomore (N=57), junior (N=59), senior (N=69), graduate (N=128) and doctoral (N=11).

This study focused on seven major Research Questions (RQ):

RQ₁: Is there a difference in the students' academic level and how they feel about threaded discussions adding to or enhancing their learning of the subject matter in fully online courses?

RQ₂: Is there a difference between students level of enjoyment with the use of threaded discussions in fully online courses at the various academic levels?

RQ₃: Is there a difference between the academic levels when comparing students' perception of the usefulness and importance of threaded discussions in a fully online course?

RQ₄: Is there a difference in the amount of time (in minutes) that students spend on the preparation and completion of threaded discussion related assignments in fully online courses based on academic levels?

RQ₅: Is there a difference between students of various academic levels when given a choice between written assignments or threaded discussion related assignments in a fully online course?

RQ₆: Is there a difference between the students at various academic levels and their willingness to schedule a fully online course when the instructor is known to use a relatively high percentage of threaded discussion assignments?

RQ₇: Is there a difference between students at various academic levels when given the option of taking the same course in a fully online the traditional face-to-face format?

RESULTS AND ANALYSIS

Demographics

This study collected data from all university academic levels; freshmen through doctoral students. One preset condition for inclusion in the data was that the student had completed at least one fully online course. This resulted in a total of 396 participants. The largest group in the sample was the graduate students who accounted for 120 survey participants. The freshmen through seniors were all somewhat close in numbers with a range of sophomore = 57, freshmen = 72. The availability of doctoral students in this study (N=11) was limited by the small number of existing university programs and overall student numbers. In most cases, for the purpose of this study, the small numbers of doctoral responses were not considered in drawing conclusions or predicting trends. All of the quantitative data and analysis in this study is displayed in Tables.

When the percentage of online courses taken was examined, the participants were asked to pick from five possibilities; 1 course, 1-3 courses, 4-7 courses, 8-10 courses and more than 10 (10+) courses taken. Here the undergraduates, freshmen through seniors were clustered within the 1-7 options. Only 11% of the sophomores and 2% of the seniors indicated they had taken 8-10 online courses. The graduate students indicated more online courses taken with 33% falling into the 1-10+ range. With the exception of the freshmen group, the majority of all participants have more than one fully online course (see Table 1).

RESEARCH QUESTIONS

RQ₁: Is there a difference in the students' academic level and how they feel about threaded discussions adding to or enhancing their learning of the subject matter in fully online courses?

The first question examined by the researchers asked the participants, "Based on your prior coursework, do threaded discussions add to or enhance your learning of the subject material in a fully online course?" The

results were fairly consistent at all academic levels. Sixty two percent of the freshmen indicated that the threaded discussions were somewhat helpful or very useful in adding to, or enhancing learning of the subject matter in a fully online course. Of the remaining academic levels, the sophomore students reported 73% followed by the juniors with 55%, the seniors with 63% and the graduate students with 75%. There was a stronger indication by the seniors (12%) and graduate students (15%) that they felt the threaded discussions added very little to the enhancement of subject matter. An interesting result was the number of freshmen (23%) that indicated they had no opinion on the question. A possible explanation is the limited exposure to fully online coursework experienced by the freshmen early in their academic programs (see Table 2).

Table 1: Academic Level and Percentage of online courses taken (1-10)

Academic Level	1	1-3	4-7	8-10	10+
Freshmen (N=72)	56%	23%	19%	0	0
Sophomore (N=57)	39%	38%	13%	3%	8%
Junior (N=59)	39%	52%	9%	0	0
Senior (N=69)	23%	56%	19%	2%	0
Graduate (N=128)	4%	29%	34%	16%	17%
Doctoral (N=11)	64%	10%	9%	9%	8%

Table 2: Do Threaded Discussions add to or enhance learning?

Academic Level	Very Little	Some, they help a little	No opinion	Somewhat helpful	Very useful
Freshmen (N=72)	0	15%	23%	31%	31%
Sophomore (N=57)	9%	18%	0	27%	46%
Junior (N=59)	5%	35%	5%	30%	25%
Senior (N=69)	12%	23%	2%	43%	20%
Graduate (N=128)	15%	10%	0	55%	20%
Doctoral (N=11)	0	67%	0	33%	0

RQ₂: Is there a difference between students level of enjoyment with the use of threaded discussions in fully online courses at the various academic levels?

The next survey question examined the participants' level of enjoyment when threaded discussions were included in a fully online course at the various academic levels. This question produced some interesting but, somewhat inconclusive results. The various academic levels were basically scattered in their responses with no clear preferences evident. The only evident trend was in the "Very Little\Somewhat" options. Here, approximately half of the freshmen (57%), juniors (50%), seniors (50%) and graduate students (50%) indicated that they only find threaded discussions very little or somewhat enjoyable. The sophomore group results differed from the others and indicated that 70% of them feel that the threaded discussions are usually or always enjoyable components of their online courses. However, all groups expressed a somewhat low level of enjoyment (Very Little) with a range of 7% of the freshmen to 30% of the sophomores (see Table 3).

Table 3: Do you personally enjoy Threaded Discussions in your online courses?

Academic Level	Very Little	Somewhat, at times	No opinion	To Some degree, usually enjoy	Always enjoy them
Freshmen (N=72)	7%	50%	0	14%	29%
Sophomore (N=57)	30%	0	0	20%	50%
Junior (N=59)	15%	35%	5%	30%	15%
Senior (N=69)	21%	23%	12%	29%	15%
Graduate (N=128)	17%	33%	4%	28%	18%
Doctoral (N=11)	0	100%	0	0	0

RQ₃: Is there a difference between the academic levels when comparing students' perception of the usefulness and importance of threaded discussions in a fully online course?

The next portion of the survey examined the student's perception of the importance of threaded discussions added to the quality of the online course at the various academic levels. All five academic levels indicated that they believed that threaded discussions could be an important and\or critical component of a fully online course. When these two options (Important Component and Critical Learning Activity) are grouped together; 64% of the freshmen, 72% of the sophomores, 55% of the juniors, 54% of the seniors and 57% of the graduate students indicated they believed the threaded discussions were important or critical learning activities. It is important to note that some of the seniors (14%) and graduate students (16%) actually felt that threaded discussions were a waste of time! (see Table 4).

Table 4: How do you find Threaded Discussions in your online courses?

Academic Level	A waste of time	Somewhat Useful	No opinion	Usually an important component	A critical learning activity
Freshmen (N=72)	0	22%	14%	57%	7%
Sophomore (N=57)	10%	18%	0	36%	36%
Junior (N=59)	10%	25%	10%	40%	15%
Senior (N=69)	14%	26%	6%	34%	20%
Graduate (N=128)	16%	26%	1%	41%	16%
Doctoral (N=11)	0	100%	0	0	0

RQ4: *Is there a difference in the amount of time (in minutes) that students spend on the preparation and completion of threaded discussion related assignments in fully online courses based on academic levels?*

When the participants were questioned as to the amount of time they must commit to preparing and completing threaded discussion assignments, the comparison between the academic levels was very close. The obvious trend in these responses was the increased amount of time spent on preparation and completion on threaded discussion assignments by the upperclassmen, juniors through graduate students. The juniors reported that 35% of them spent between 46-61+ minutes on these assignments. The seniors reported a slightly higher percentage (37%) followed by the graduate students who indicated that 46% of them spent from 46-61+ minutes working on threaded discussion assignments. The gradual increase in preparation and completion time might be explained by the increasing complexity of the assignments as the coursework becomes more challenging at the upper academic levels. Senior and graduate level students are frequently expected to make more detailed and extensive responses to course threaded discussions. In addition, upper level online courses will often expect a higher level of student-to-student interaction in this asynchronous environment (see Table #5).

RQ5: Is there a difference between students of various academic levels when given a choice between written assignments or threaded discussion related assignments in a fully online course?

The next area to be examined in this study was to see if there was a difference between students at the various academic levels when given a choice between a written course assignment and a threaded discussion assignment. The only clear preference was the sophomore group with 73% indicating they favored the threaded discussion assignment. The remaining academic groups were about evenly dispersed between three options; 1) They are about the same (20%-30% range), 2) I prefer the written assignment (29%-44% range) and, 3) I prefer the threaded discussion assignment (30%-43%). If the doctoral students' responses are included, four of the six academic groups (freshmen, sophomore, senior, doctoral) show a clear preference for the threaded discussion assignment over the written assignment (see Table 6).

Table 5: How much time do you spend preparing and completing

Threaded Discussion assignments?

Academic Level	0-15 Minutes	16-30 Minutes	31-45 Minutes	46-60 Minutes	61+ Minutes
Freshmen (N=72)	8%	38%	46%	0	8%
Sophomore (N=57)	27%	46%	9%	9%	9%
Junior (N=59)	10%	25%	30%	20%	15%
Senior (N=69)	17%	23%	20%	26%	11%
Graduate (N=128)	2%	17%	35%	22%	24%
Doctoral (N=11)	33%	33%	34%	0	0

Table 6: Do you prefer a Written assignment or a Threaded Discussion?

Academic Level	I don't Really like either	They are about the same	No opinion.	Prefer the Written assignment	Prefer the Threaded Discussion assignment
Freshmen (N=72)	0	28%	0	29%	43%
Sophomore (N=57)	9%	0	0	18%	73%
Junior (N=59)	5%	30%	0	35%	30%
Senior (N=69)	3%	27%	0	29%	41%
Graduate (N=128)	0	20%	0	44%	36%
Doctoral (N=11)	0	0	0	33%	67%

RQ6: Is there a difference between the students at various academic levels and their willingness to schedule a fully online course when the instructor is known to use a relatively high percentage of threaded discussion assignments?

One of the final areas of comparison between various academic levels was in regard to their willingness, or reluctance, to take an online professor's course if they knew that a high percentage (25-40%) of the course activity and assessment would be based on threaded discussions. Here again the sophomore respondents broke from the other academic levels with 73% of them indicating they would actually want this professor's course. The remaining academic levels all indicated that about 20% of them would actually want to schedule

this type of course. However, the clear majority of these levels (excluding the sophomore respondents), indicated that they would schedule this professor's course because of either scheduling or it really makes little difference; with 72% of the freshmen, 70% of the juniors, 66% of the seniors and 67% of the graduate students selecting these options. Only a small number of respondents (<7%) indicated they would never schedule this course (see Table 7).

Table 7: Would you schedule a fully online course if the instructor had a high percentage of threaded discussion course requirements (25-40%)?

Academic Level	Never	I might, Because of scheduling	No opinion	Probably, it makes little difference	I would want This course
Freshmen (N=72)	0	36%	7%	36%	21%
Sophomore (N=57)	0	27%	0	0	73%
Junior (N=59)	5%	30%	5%	40%	20%
Senior (N=69)	3%	26%	11%	40%	20%
Graduate (N=128)	7%	27%	6%	40%	20%
Doctoral (N=11)	0	67%	0	33%	0

RQ7: Is there a difference between students at various academic levels when given the option of taking the same course in a fully online the traditional face-to-face format?

The final question for all academic levels examined was the students' preference for scheduling either an online course or the same course in the traditional face-to-face format. The sophomore group again differed from all of the other academic levels with a higher (46%) indicating that they prefer the fully online course over the face-to-face course (27%). The remaining academic levels gave strong preference to selecting the face-to-face course offering (range 52%-63%). Overall, less that one-fourth of the participants indicated that they would be happy with either course format. If the 11 doctoral student responses are considered, it is almost an even distribution with 33% indicating the face-to-face option, 33% indicating that either is fine and 34% indicating that they would prefer the fully online option. With the exception of the sophomore group, there is a clear indication that most students would prefer the face-to-face course option (see Table 8).

Table 8: Given the option taking of a traditional, face-to-face course or a fully online course, which would you prefer?

Academic Level	Face-to-Face	Either Is fine	No opinion	Fully online
Freshmen (N=72)	54%	8%	0	38%
Sophomore (N=57)	27%	27%	0	46%
Junior (N=59)	63%	26%	0	11%
Senior (N=69)	59%	15%	2%	24%
Graduate (N=128)	52%	19%	0	29%
Doctoral (N=11)	33%	33%	0	34%

SUMMARY AND CONCLUSIONS

In summary, there are some obvious differences in how students at various academic levels view threaded discussions in online learning. This study did not attempt to examine why these differences exist; rather based on a combined 50+ years of university-level teaching, the researchers offer some possible reasons, speculations and observations.

After the existing data was filtered to examine each specified academic level, the total number of freshmen through seniors was fairly consistent with a range of 57-72 participants. The graduate students comprised the largest group of participants with 128 students responding to the survey. Only 11 of the doctoral students responded to the survey.

The first group of research questions (1-3) examined the students' perceptions about threaded discussions adding to or enhancing the learning experience and the usefulness of threaded discussions in general. In addition, the overall level of student enjoyment when working with threaded discussions was discussed. The majority of students at all academic levels indicated that they felt the threaded discussions were either somewhat helpful or very helpful by adding to and\or enhancing learning. However, there were some strong indications from the seniors (12%) and graduate students (15%) that threaded discussion add very little to the enhancement of the course content and subject matter. Perhaps after four to five years of taking online courses, the students at the higher academic levels may have experienced overuse and\or overexposure to the format and processes involved with threaded discussions?

When the participants were then asked if they found threaded discussions to be useful and important to the content and goals of the online course, all five academic levels (freshmen-doctoral) reported that they believed threaded discussions were an important or critical component of an effective online course. However, as reported previously in the area of enhancement, a number of upperclassmen reported that threaded discussions are a waste of time (seniors=14%, graduate students=16%). When students were questioned about their level of enjoyment when working with threaded discussions, none of the academic levels indicated any clear preference or option. There was, however, a definite pattern of selecting the two lower options; very little or only somewhat enjoyable.

When the students were asked about the amount of time devoted to the preparation and completion of threaded discussion assignments, the trend indicated increased time devoted by the upperclassmen. Twenty-

four percent of the graduate students reported that they spend more than 61 minutes on a threaded discussion assignment.

The third phase of the study looked at students' perceptions of threaded discussion versus written assignments along with their preferences for online verses traditional, face-to-face courses. The only clear preference for a threaded discussion assignment over a written assignment was reported by the sophomore group. This group had 73% indicating that they favored the threaded discussion. When asked if they would take a professor's course if they knew he\she had a high percentage (25-40%) of the class activity devoted to threaded discussions, most felt that, either because of scheduling or no strong preference, they would schedule this course. However, the sophomore group again gave a strong indication (73%) that they would actually prefer this type of course.

The final question in this study asked participants if, given a choice, of taking the same course in the traditional, face-to-face format or taking it in a fully online format what would the select? With the exception of the sophomore group, all academic levels indicated a preference for the traditional, face-to-face course. A majority of the sophomore group (46%) indicated a preference for the fully online course format.

The results of this study indicate clear differences in opinions and choices between students at the various academic levels in regards to threaded discussions in online courses. Perhaps much of this can be attributed to life styles and life situations. In general, the freshmen and sophomore students have had fewer online courses and many\all of them are in the lower level "core" area of their academic program(s). Upper level students, including juniors, seniors and graduate students have had several years of experience in the online format. In addition, the threaded discussion activities at this higher level of coursework may be more demanding and engaging than the lower level courses. The results give clear indications that the upper classmen have more acceptance and higher levels of interest and engagement in course threaded discussions than the freshmen and sophomores.

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