

## Instructor's Discussion Forum Effort: Is It Worth It?

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### Abstract

The popularity of virtual education resulted in institutions seeking best practices as a guide to providing a quality education to online students. The purpose of this retrospective, correlation study was to examine online instructors' discussion forum participation, including time spent on a weekly basis overall in the course and number of posts to discussion forums, to determine if there was a positive effect on students' overall discussion grades. The study included 10 purposively selected courses. Statistics were used to define the sample population. Statistical calculations indicated no correlation between the numbers of posts to the discussion forums to student grades, but a positive correlation exists between the amount of time spent by the instructor in class to higher discussion grades earned by students. The findings of this study will help to identify criteria that educational institutions can use to develop best practices for online instructors.

**Keywords:** message board, time investment, facilitator, teacher

While online education has been around for some time, it has more recently developed a rather strong presence in both the private and public sectors of education. Institutions offering online courses are looking to define best practices that will help maximize students' motivation and learning, while providing reasonable expectations of faculty members' performance (Vonderwell & Zachariah, 2005).

It is believed that the efforts instructors put forth in the online discussion forum have an effect on students' desire to understand, and, overall, to their success (Morris, Xu, & Finnegan, 2005). Generally speaking, instructors accept that they are responsible for four main duties while teaching online. First, they are responsible to review the material that is presented in the class to ensure that it is current, clear, and accurate. Second, they are responsible to fix, or have fixed, any material that needs to be adjusted (Morris, Xu, & Finnegan, 2005). Third, instructors are responsible to show their presence in class. This is commonly demonstrated when the instructor participates in the asynchronous discussion forum throughout a given week. Instructors understand that it is the student's primary responsibility to learn the material presented to them in class. However, instructors also understand that it is their responsibility to assist students as they learn, so that they can meet their greatest potential (Morris et al., 2005). The final role of an online faculty member is to assess a student's learning. This can be done in a variety of ways, but it is typically done by grading and providing the students with feedback on how they can improve (Morris et al., 2005).

The discussion forum is an area where instructors and students discuss key concepts for the week. Discussion forums are known by other names, such as threaded discussions, discussion boards, threaded discussion boards, or threaded discussion forums. Discussion in an online class typically happens in one of two ways. Discussions can be synchronous or asynchronous. Synchronous discussion is when the students and the instructor participate together at a specific time. Asynchronous discussions occur when students and the instructor have an ongoing discussion over a span of time, but not necessarily at a specific time. A significant amount of learning can take place on the discussion forum as a class explores topics and skills necessary for their chosen careers by reading and sharing experiences, asking and answering questions, and interacting together (Lauron, 2008).

The majority of educational institutions specify a specific amount of time, or number of posts, in which they would like their online faculty to participate in the weekly discussion forums. While this is common, nearly one-quarter of instructors feel that they should be the ones who determine when and how they assist their students in the discussion forum (Mandernach et al., 2006).

An active discussion forum shows that students and instructors are both participating in class. However, an overly active discussion forum can be overwhelming to some students and instructors because of the large number of comments or discussion posts. Students who feel overwhelmed typically do not participate in the discussion forum as often as students who are not feeling overwhelmed (Vonderwell & Zachariah, 2005).

### **Purpose of the Study**

The purpose of this study was to determine the relationship between the amount of time spent in the course per week and the numbers of discussion posts that instructors contribute to the online discussion forum in an undergraduate career college program, to the students' overall discussion grade. The secondary purpose of this study was to determine the optimal amount of time and discussion posts that an instructor teaching undergraduate courses at a career college should contribute to produce the highest discussion grades from students.

It was hypothesized there was no relationship between the time spent in the course and the number of posts that an instructor contributed to the discussion forum, and the students' overall discussion grade.

### **Literature Survey**

During the last few decades, most educational institutions have begun to expand into web-based or online education. Online education is now used by virtually every type of educational institution, including K-12 school systems, 2-year colleges, 4-year universities, and graduate schools in both the public and private sector. Some of these institutions offer hybrid courses, which are taught while students split course time between the face-to-face and online learning environments. Many schools have dedicated web-based or online programs that students can complete without ever stepping foot on the ground of a campus.

While online education has been around for several decades, best practices are still being developed. Administrators, researchers, and instructors are still trying to understand the pedagogy of online learning, and develop practices to maximize students' understanding (Vonderwell & Zachariah, 2005).

### **Theoretical Frameworks**

The increase in web-based learning in the last few decades has brought rise to a growing population of instructors in need of expectation and evaluation standards to assist them in delivering quality education (Mandernach, Gonzales, & Garrett, 2006). Instructors are either completely new to teaching in any environment, or have transitioned from a face-to-face teaching environment. Many instructors teach at least one traditional class in addition to an online class, or for various educational institutions (Mandernach, Dailey-Hebert, & Donnelly-Sallee, 2007). With the continual movement into online education, it is obvious that researchers must establish best practices as a baseline for educational institutions. Both educational institutions and instructors are questioning the amount of time that instructors should be required to spend in order to efficiently manage the online classroom (Mandernach et al., 2007).

Most educational institutions agree that it takes a significant amount of time, at least twice as much as for a traditional course, to design, develop, and review course content before a course can be taught online (Morris, Xu, & Finnegan, 2005). However, they don't know what time investment is reasonable to tell instructors who have agreed to teach online. Research has shown that online teaching requires significantly more time and effort to accomplish the preparation, facilitation, instruction, and interaction, as well as learning and troubleshooting technology, than is required than face-to-face teaching requires (Cavanaugh, 2005; Mandernach et al., 2007). One online course in their study took twice the amount of time to teach as the traditional face-to-face version (Pattillo, 2005). The instructor's workload can be affected by multiple elements, but most agree that participation and grading of the course discussion consistently takes the majority of the instructor's time from the beginning to the end of the class (Morris, 2005).

Instructors teaching in a variety of institutions typically feel that they have three main roles in online education. The first role includes reviewing the static course content provided by the school to verify that the content is correct and up to date. They also ensure that everything is working properly, fix any errors that they find, and revise or add to discussion questions as they feel is appropriate (Morris, Xu, & Finnegan, 2005). The second role of instructors is to actively participate in the class, including spending time in the discussion forum. Many instructors feel that it is the students' primary responsibility to learn the course material by participating in the discussion forum, reading texts, completing homework and submitting exams. While students are responsible for actually learning the material, instructors are responsible for assisting them with the learning process (Morris et al., 2005). The final role that instructors reported is that the majority of their time was spent grading and providing feedback on discussion and written assignments. In most cases, instructors complete the grading and feedback responsibilities before they move onto participating in the discussion forum. Unfortunately, this could leave students in the discussion forum without the instructor present at some points during the class (Morris et al., 2005).

There are many elements to take into consideration when researching and studying online learning. One element that the literature unanimously highlights as an essential element in online learning is the instructor's presence in the discussion forum (Mandernach et al., 2006). Many studies have supported the fact that it is the instructor's main responsibility to effectively keep the discussion forum harmonious by sharing insight and knowledge (Morris et al., 2005). It is through communication, especially in the discussion forum, that students are exposed to multiple viewpoints and true to life experiences that are shared. These discussion posts give students the opportunity to increase their knowledge and discover ways that the learning objectives will assist them in their future careers (Carwile, 2007).

The purpose of the discussion forum is to provide an area where students and instructor can work together to explore a topic and discover the skills and objectives necessary for a successful learning experience (Lauron, 2008). Discussion forums are an area where the class and the instructor converse asynchronously to discuss key concepts and concerns, share experiences, ask questions, and interact student-to-student and instructor-to-student. Asynchronous discussions do not occur in real time. Students participate any time of day or night that their schedule allows. Discussion forums can also be called threaded discussions, discussion forums, or threaded discussion forums (Mandernach et al., 2006).

Online instructors have specific obligations that they must meet according to the standard(s) that the institution enforces. A common requirement of many institutions is that instructors participate for a required amount of time, or number of posts, in the discussion forum each week. For the most part, the majority of instructors feel that it is appropriate to have participation requirements as a requirement to teach. However, approximately 23% of instructors felt that they should be able to participate when and how they wanted, instead of how the school dictates (Mandernach et al., 2006). It's important to note that the disagreement was not about whether or not to participate in the discussion forum, rather when and how much to participate (Mandernach et al., 2006).

Successful student participation in the online discussion forum hinges on several factors. Students tend to participate more often when they are familiar with the discussion topics either personally or professionally. The ease of using the learning management system technology plays a large role in discussion forum participation by students. When the discussion forum is set up simply, students tend to participate more often. Another element that increases student comments in the discussion forum is how closely the course content relates to the weekly discussion topics. There is better participation in the discussion forum when the discussion topic for the week is strongly supported by the content found in the course (Vonderwell & Zachariah, 2005).

Active discussion forums are typically considered a good sign because students are thinking and participating in class. However, active discussion forums have their drawback as well. They can be overwhelming to some students because of the large number of comments by their classmates. A feeling of being overwhelmed definitely reduces the number of discussion forum posts by students. A reduction of posts is also experienced when students don't understand the topic discussed, or if they are intimidated by the other students in class (Vonderwell & Zachariah, 2005).

### **Comparison to Face-to-Face Classes**

In a traditional face-to-face course, it is not unusual for a few students and the instructor to dominate the discussions in one or more class meeting times. Online discussion forums are set up completely different, and this typically doesn't happen. Some students may participate more than other students, but most educational institutions include participation in the online discussion forum as a portion of the student's final grade. Online classes are designed to encourage participation from every class member in the discussion forum by requiring that each student post at least one comment to the discussion forum each week (Black, 2005).

Students in a face-to-face environment can observe their instructor taking an active role in their learning process as they stand before the class. Students don't seem to often dispute their instructor's presence when taking a face-to-face class. Online instructors also need to let their presence be known in the classroom, which doesn't happen naturally in online classes. The instructor's presence is demonstrated by written expressions in the discussion forum, communication by e-mail, and announcements. Instructor communication such as sharing examples, encouraging student-student and student-instructor communication, and using the students' names all enhance the student experience (Mandernach et al., 2006).

In a face-to-face classroom, students are accustomed to waiting until the next class to get their questions answered or get feedback from their homework assignments and exams. If students are struggling with course materials, they address the issues with their instructor during the next set office hour. In an asynchronous online environment, there isn't a set meeting time and many instructors do not have set office hours. Unfortunately, this doesn't change students' expectations of their online instructors. Students taking online classes expect instant feedback on assignments, exams, discussion forum comments, and e-mail communication from their instructor 24 hours a day, 7 days a week. Many online instructors teach face-to-face courses and/or work in their chosen profession full time as well, which makes it even more difficult for them to respond 24 hours a day, 7 days a week. This expectation often leads to frustration between students and instructors (Mandernach et al., 2007).

In online learning environments, instructors encourage student learning by providing an underlying motivating tone in the course. Instructors are commonly successful when they create a sense of student community, typically found in discussion forums, where everyone can share their knowledge and learn together in a nurturing environment (Mandernach et al., 2006). There are numerous studies that support that threaded discussions encourage and enhance students' critical thinking skills (Mandernach et al., 2007). However, many online instructors don't know how to facilitate the threaded discussion in a way that increases critical thinking. Critical thinking is the direct result of the instructor's interaction in the online classroom (Mandernach, Forrest, Babutzke, & Manker, 2009).

### **Online Instructor Responsibilities**

The role of an online instructor is evolving in every educational institution. An instructor's responsibilities have shifted from the responsibilities of a traditional face-to-face instructor's responsibilities, to incorporate obligations that are more appropriate for online education. Instructors are planners who must clarify content for students, promote and hold students to the course expectations, and troubleshoot technical issues. They model expected behaviors and interaction skills to set a good example for students enrolled in their classes. Most of all, they motivate students by providing support and encouragement before, during, and after the class (Mandernach et al., 2006).

Instructors are responsible for setting up the class by adding, deleting, and organizing content to enhance the student's learning. They set deadlines and promote objectives and professionalism in the classroom (Carwile, 2007). The instructor also plays a social role in the course as they send out welcome messages, share true to life examples in the discussion forums and chats, and provide feedback to students mentoring them to become better students and professionals (Carwile, 2007).

It is no longer acceptable for instructors to passively wait for students to complete their assignments without actively teaching. Instructors are expected to set an example that students can pattern in the discussion forum. They are expected to increase the students' learning experience by conducting synchronous and asynchronous chats. Instructors should focus on the courses' learning objectives, and

ensure that students are demonstrating these objectives through the work that they are graded on (Carwile, 2007).

Online instructors must gain their students' respect to be fully successful teaching online. Instructors need to be timely in their responses, both in e-mail and the discussion forums, as well as providing detailed assessment feedback to students (Mandernach et al., 2006).

## **Methods**

### *Research Design*

The study was a retrospective, correlational study.

### *Study Participants*

Archived courses were purposively selected from a nationally accredited online career college located in the southeastern United States. The 10 courses with the highest end of term student evaluations were chosen for the study. The data gathered was from courses taught by instructors who were actively working in the fields of health science and education. The students, both male and female, were participating in undergraduate courses in the field of health science. The students were specializing in medical billing and coding, health care management, or administrative medical assisting. The methods of communication used to provide students with information consisted of e-mail, announcements in the online class, or threaded discussion, using the school's learning management system.

In each class, students were required to participate in (1) at least one threaded discussion per week by answering an initial discussion post no later than the third day of the week, and (2) follow ups on at least two of their class members' posts throughout the remainder of the week. This was the minimum discussion requirement, and more participation from the student was encouraged.

Students' discussion posts were graded on quality as well as timeliness. Posts needed to demonstrate the students understand of the course materials, answer the main discussion question, and add original substance to the discussion. Each post should be written in a concise manner and contain proper spelling, grammar, and APA citations.

Students who were enrolled to take classes completely online were familiar with the participation requirements from previous terms. However, ground campus students taking an online course had little or no experience using online discussion forums, and had to familiarize themselves with the requirements and develop a habit of participating which was different from their usual participation.

Instructors were required to participate in the discussion forums by asking additional questions and guiding the discussion with students at least six days per week. The number of minutes the instructor spent in the course documented was the amount of time that the link to access the course was activated. The time neither differentiated between idle and active time, nor between time in the discussion forum and other areas of the course.

The study included a review of 10 courses consisting of 15-30 students per course. The majority of the students in this study was enrolled in online classes exclusively and was experienced at using discussion forums. However, a small percentage (17%) of students registered at the school's ground campus also enrolled in online courses. These students had little to no previous experience in the online discussion forum. The research protocol for this study was approved by A.T. Still University's Institutional Review Board as well as the institution where the data was gathered.

### *Variables*

Specific variables describing the students included in the study are listed below. These analyzed variables were important to see patterns and to fully analyze the data that was found. The descriptive variables included were:

1. Age
2. Sex
3. Marital status

4. Online or ground student
5. Previous schooling

The following outcome variables were included (Portney, 2009):

1. Final overall discussion grade average in comparison to the instructor's time in the course, and number of posts in the discussion forum
2. Optimal amount of time in the course and number of responses that the instructor needed to post in the discussion forum to help facilitate the highest student discussion grades

### *Evaluation*

Final course evaluations completed by students were reviewed to determine which instructors and courses, according to students, were the most successful at providing a quality learning experience. Ten of the courses with the highest rating were purposively selected for the study. No identifying factors, including student or instructors' names, were collected to ensure participant anonymity.

### *Discussion Grading Rubric*

Discussion grades were calculated by the instructor throughout the course, based on the grading rubric provided to the student and instructor before the course began. The grading rubric was adapted from a well-known and highly regarded rubric developed by Bill Pelz, Psychology Instructor, Herkimer County Community College (Pelz, 2004). The rubric describes the goals and purpose of the discussion board, so that students have a firm understanding of what is expected. Detailed information on what constitutes a quality discussion post is also included, along with examples for students to review (Pelz, 2004).

The grading rubric encourages students to ask themselves questions to ensure that they are contributing a quality comment to the discussion board.

The grading rubric states:

"To ensure that you are contributing a quality post, ask yourself the following questions:

1. Is the information accurate?
2. Is your post relevant to the topic under discussion?
3. Does your post answer the question(s) required?
4. Does your post teach something new, or apply a concept in a new way?
5. Have you added to the academic atmosphere of this course?" (Pelz, 2004)

The final portion of the discussion grading rubric contains a point breakdown to promote consistency in grading across all courses and sections.

### *Statistical Analysis*

In each course, the weekly threaded discussions were quantitatively analyzed and reviewed. A correlation was drawn between the amount of time instructors spent in the course and the students' weekly discussion grades. A second correlation was drawn between the number of posts contributed to the discussion forum by instructor and the students' overall discussion grades.

A thorough analysis, using IBM SPSS Statistics for Windows, Student Version 18, of the 10 chosen archived courses and 236 students' demographics were patterned after the technique used by Mandernach, Dailey-Herbert, and Donnelly-Sallee (2007). Data were extracted from the courses and campus reporting software, and used to calculate applicable descriptive statistics. The mean, median, frequency, and chi-square were calculated on the variables used in the study that further defined the sample population, including the students' categorical age; sex; marital status; previous schooling; and enrollment status, the last to explain if they were enrolled as a traditional ground student or enrolled to take courses completely online. Fisher's exact test was used to test the data at  $p=0.003$ .

Spearman's rho was used to illustrate the amount of time instructors participated in the class, as well as the number of posts instructors contributed to the discussion forum in relationship to the students' overall discussion grades received in the course at  $p<0.01$ . Pertinent results were presented using tables and

graphs to display the findings. Scatter plots illustrate the results of the Spearman's rho calculations. Scatter plots were also used to visually determine the optimal amount of time and the number of posts that an online instructor should contribute to help facilitate the highest discussion grades from students.

## Results

### *Sample Description*

Data included in this study were gathered from an established online health science program. The 10 successful courses taught were selected based on student end of term evaluations.

The maximum course enrollment in the sample was 28, with an average course enrollment of 19 students. A total of 236 students completed the courses, with 93.6% being female, 3.8% male, and 2.5% who didn't specify their gender. Students' marital status was difficult to determine since most of the online students did not provide this information. For the students who did provide their marital status, 29.5% of the total 236 were single, 8.5% married, 1.7% divorced, and 3.0% separated. The remaining 57.2% of students did not specify marital status. Most of the students (55.9%) had graduated from high school and enrolled at the school with no academic experience other than high school. An additional 28.8% had some college experience, 11.9% had earned a GED, and 3.4% did not specify. In the case of gender, prior education, and marital status, there were no statistically significant differences between the online group and ground group regarding how the students in these groups were distributed. The groups were tested using both the chi-square and Fisher's exact tests. A percentage of students (17%), who regularly took traditional ground-campus courses, were enrolled in one of the courses in this study. Participant characteristics of online students compared to ground students from the sample are illustrated in Tables 1-4.

Table 1. *Participant Characteristics - Student Sex*

	Online			Ground			Total	
	(n = 195)			(n = 41)			(N = 236)	
Student Sex	Frequency	Percent		Frequency	Percent		Frequency	Percent
Female	183	93.8		38	92.7		221	93.6
Male	6	3.1		3	7.3		9	3.8
Unspecified	6	3.1		0	0.0		6	2.5

Table 1. *Participant Characteristics - Marital Status*

	Online			Ground			Total	
	(n = 195)			(n = 41)			(N = 236)	
Marital Status	Frequency	Percent		Frequency	Percent		Frequency	Percent
Single	40	20.5		30	73.2		70	29.7
Married	16	8.2		4	9.8		20	8.5
Divorced	2	1.0		2	4.9		4	1.7
Separated	3	1.5		4	9.8		7	3.0
Unspecified	134	68.7		1	2.4		135	57.2

Table 2. Participant Characteristics - Previous Education

	Online		Ground		Total	
	(n = 195)		(n = 41)		(N = 236)	
Previous Education	Frequency	Percent	Frequency	Percent	Frequency	Percent
GED	25	12.8	3	7.3	28	11.9
High School	109	55.9	23	56.1	132	55.9
College	54	27.7	14	34.1	68	28.8
Unspecified	7	3.6	1	2.4	8	3.4

Table 3. Participant Characteristics - Student Age

	Online		Ground		Total	
	(n = 195)		(n = 41)		(N = 236)	
Student Age	Frequency	Percent	Frequency	Percent	Frequency	Percent
< 21	6	3.1	4	9.8	10	4.2
21-25	24	12.3	14	34.1	38	16.1
26-30	48	24.6	9	22.0	57	24.2
31-35	42	21.5	7	17.1	49	20.8
36-40	31	15.9	4	9.8	35	14.8
41-45	10	5.1	0	0.0	10	4.2
46-50	16	8.2	1	2.4	17	7.2
51-55	12	6.2	2	4.9	14	5.9
> 56	6	3.1	0	0.0	6	2.5

The mean age of students in the total sample was 33.6 years ( $SD = 9.7$ ), with the mean age of ground campus students being 28.8 ( $SD = 8.6$ ), and online students being 34.7 ( $SD = 9.6$ ). This observed difference in average ages of students in the two subgroups was found to be statistically significant ( $Z(41, 195) = 3.91, p < 0.0001$ ). The sample median age was 32.0. The median age of ground students was 27.0 and for online students it was 33.0. The distribution of ages of students enrolled at a ground campus is tri-modal, having a frequency of 4 for ages 21, 23, and 27. Online student age data are bi-modal with ages 29 and 34, both with a frequency of 13. For the entire sample population, the modal age is 34, which was recorded 15 times. The result of Fisher's exact test was  $p = 0.003$ , supporting a difference between the distribution of student ages for ground students and online students.

### Outcome Measures

The mean amount of time spent by instructors in the class was 431.47 minutes per week ( $n = 10$ , median = 393.3,  $SD = 136.57$ ) and the mean number of posts by instructors was 15.26 ( $n = 10$ , median = 12.5,  $SD = 8.30$ ). The mean overall discussion grade for students was 75.1 ( $n = 10$ , median = 76.5,  $SD = 7.4$ ). Using Spearman's rho, the relationship between the average time instructors spent in the class and the students' average overall discussion grade was examined. The correlation coefficient was  $r(10) = 0.952, p < 0.01$ , suggesting a strong positive relationship. Similarly, the relationship between average student

discussion grades and average number of instructor posts was examined. The Spearman's rank correlation coefficient was calculated to be  $r = 0.091$ , suggesting a small positive association between variables. However, the result was not statistically significant ( $p=0.10$ ).

A scatter plot illustrating the relationship between the average amounts of time that instructors spent in the online course and the students' average overall discussion grade was reviewed (see Figure 1). Visual inspection of the scatter plot revealed there is a relationship when an instructor's time spent in the online classroom at a career college helps to facilitate the highest discussion grades from students. A second scatter plot was analyzed to determine the optimal number of posts an instructor should contribute to the online discussion forum to facilitate the highest discussion grades from students. Since this relationship was not correlated, it appears that the number of instructor postings do not relate to higher student discussion forum grades (see Figure 2).

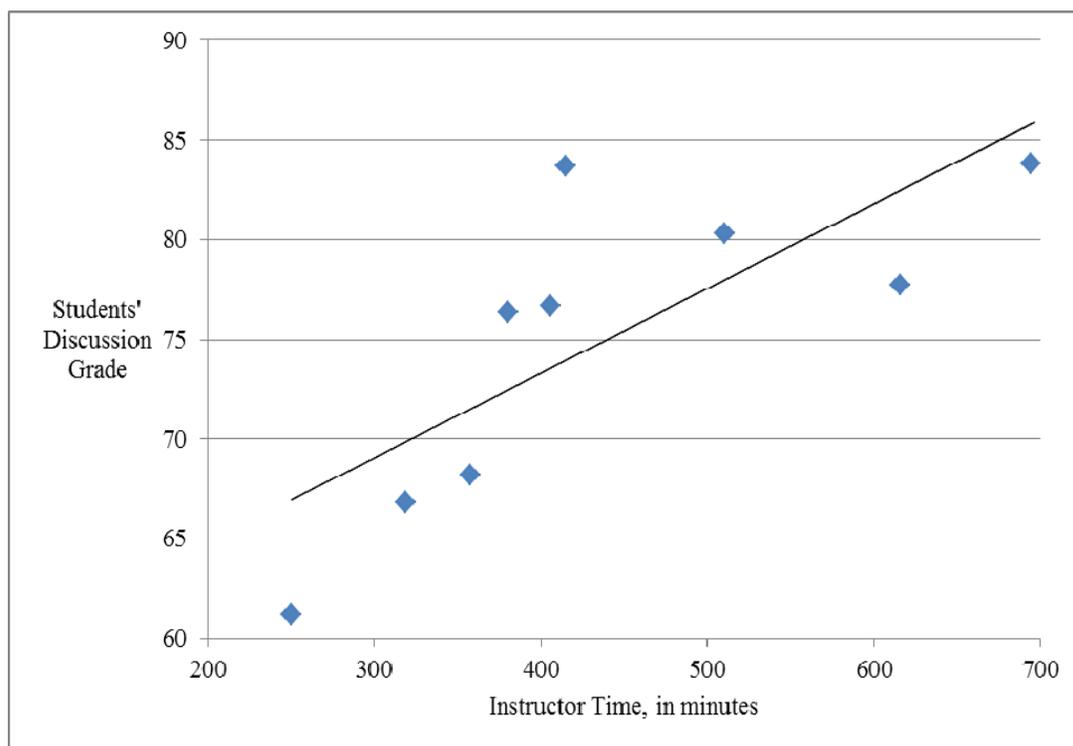


Figure 1. Amount of instructor time spent in online course in relation to students' overall discussion grade

## Discussion

This study revealed some findings that could assist educational institutions in preparing best practices for online instructors. This study was not intended to provide an overall picture of instructors' responsibilities or overall time commitment while teaching online courses.

The analysis using Spearman's rho demonstrated that there was a strong relationship between the time that an instructor spends in the online class and the students' discussion grades in an undergraduate class at a career college. The data also indicated that the number of posts an instructor contributes to the discussion forum has some effect on students' discussion grades. However, the study did reveal a weak relationship between student discussion grades and number of instructor posts.

This study also sought to determine the optimal amount of time spent in class as well as the number of discussion posts an online instructor needed to provide, to facilitate the highest discussion grades from students. The results of the study revealed that undergraduate instructors should spend a minimum of 375 minutes (6.25 hours) per week in the online classroom to obtain best results. It was, however, impossible to determine the minimum number of posts that might be needed to positively impact student

discussion forum grades from the results of this study because a significant correlation was not found in this study.

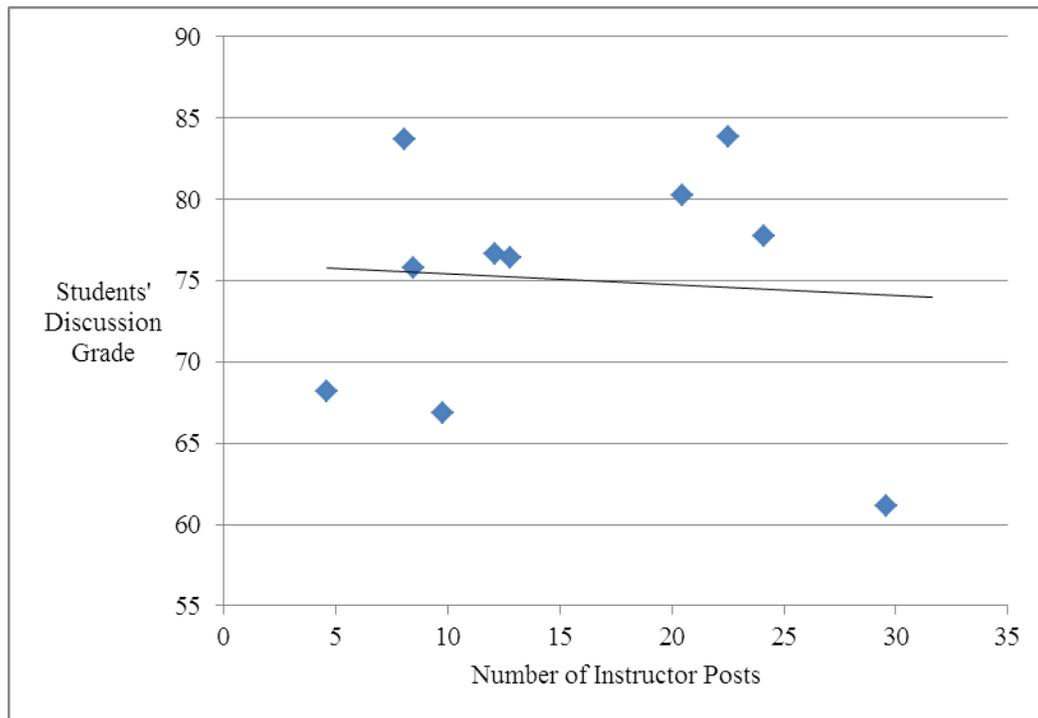


Figure 2. *Number of instructor posts in the online discussion forum in relation to students' overall discussion grade*

A study by Mandernach et al. found that there was a large variation in the number of posts contributed by instructors to the online discussion forum (2007), where some instructors feel that their presence in the discussion forum hinders the students, while other instructors feel that their guidance enables students to reach a greater potential (2007).

Kiriakidis performed a study in 2008 that revealed a positive relationship between the number of instructor and student posts in the online discussion forum, though the study did not provide a specific number of posts needed to achieve a positive effect in terms of discussion grades. Another study by Morris et al. provides some guidance on the number of posts. In that study, instructors who posted 125-275 times per course appeared to encourage more student participation. Classes where the instructor posted more than 275 times, or less than 125 times, did not indicate a positive response (Morris, 2005). The study did not mention the impact of the posts on students' grades.

For the most part, instructors feel strongly that they should be contributing to the discussion forum like the results of this study suggests. However, they also feel that there should be no specific requirement placed upon them to participate. Instructors believe that their participation in the discussion forum should be at their discretion and not imposed on them by the school (Mandernach, 2006).

There is no indication from this study that a guideline should be implemented that requires a specified number of posts. The authors of this study suspected that the type or quality of discussion post is more important than the number of discussion posts contributed by instructors. However, further research is warranted to measure different discussion activities, specifically the quality of the posts and level of critical thinking they stimulate as they relate to student learning and earned grades. Similar studies could further explore reasons why instructor discussion posts are not a contributing factor in students grade performance; if a specific number of posts by the instructor are needed to get students to engage in the discussion; if a specific number of posts by instructors is needed in order for students to succeed in the discussion board; and finally, what number of comments posted by the instructor can result in a decrease or increase in participation from students.

The authors suspect that student participation in the online discussion forum is affected by the intermingling of ground students taking a class online. Ground students who typically take courses on ground campuses may take some time to become familiar and comfortable participating in the online discussion forum, while students who take courses completely online are generally more proficient at using the discussion forum from previous experience. An additional study should be performed to determine how the mingling of these two student groups affects the discussion forum as a whole.

The limitations of this study were based on the specific data variables that could be extracted from the system. Within the learning platform used to gather data for this study, it was not possible to measure the discrete periods of time that the instructor spent in the discussion forum versus other areas of the course. Therefore, the results of this study showed a relationship between the amount of time an instructor spends in the online classroom and higher discussion grades from students, but it is not known how much time the instructor should spend in the discussion forum itself. Additional research should be performed to determine the amount of time in the discussion forum that instructors need to spend to have a positive effect on students' grades. Subsequent studies could further explore this area and to determine if time instructors spend in other areas of the course have a positive effect on students' grades.

For this study, data were pulled from the courses after the term concluded. The number of students who finished the course was different from the number that started it. As a result, the number of students participating in the discussion forum changed on a weekly basis. Also, the campus management system from which the data were extracted was not set up to provide specific information explaining when and why students dropped, or stopped participating in the course. Further studies would reveal the effects that interruptions in student participation or withdrawal from the course have on discussion board activity and earned grades.

This study outlined various demographic factors to describe the student population as a whole. As a result, variable student quality was not included in the study. Further research would reveal how student demographic factors, like GPA, influence different sections of the same course, taught by the same instructor.

More research is needed so that educational institutions can provide effective best practices that will help instructors maximize students' motivation and learning in an online environment. This study reveals the importance of instructors being in the virtual classroom, but more research needs to be performed to fully understand the impact that instructors' participation in the discussion board has on online students.

### **Conclusion**

Threaded discussion areas in online classes provide an invaluable learning opportunity for students as the literature reviewed reveals. It is the researcher's hypothesis that the effort that instructors put forth in the threaded discussion is met at least minimally by the majority of the students in class. As a result of this increased interaction, students understand the concepts to a greater depth, develop a firmer foundation in core competencies, as well as earn a higher grade in the course.

Recent studies have indicated that instructors should be putting emphasis on the threaded discussion area of online courses, which has often times been neglected. More research needs to be conducted to better determine if the instructors' participation in the discussion forum truly motivates students. If it is found that it does, then questions about the appropriate amount of time for instructors to participate will need to be researched.

Educational institutions are looking to implement best practices to the instructor's delivery of courses to provide a more quality education for their students. In order to do this, more research needs to be performed especially in the area of instructors' efforts in the threaded discussions.

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