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IMPLEMENTATION OF ONLINE FORUMS IN GRADUATE EDUCATION

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Abstract¹

This paper argues that online forums in graduate education provide a constructivist-learning environment. The paper summarizes results of current research using online forums in the classroom. Further, it evaluates the use of a technology-mediated communication tool in the context of graduate education. The results suggest that online discussion groups enable dialogue and effectively reinforce material covered in class. The study argues for the inclusion of online forums within a teaching methodology.

Keywords— online education, online learning environment, online forums.

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INTRODUCTION

Online forums provide a venue where class material can be reviewed, discussed and reinforced. The underlying presumption is that knowledge can be constructed by an online asynchronous dialogue of class material. The *conversational model of learning* – proposed by Laurillard (cited in Thomas, 2002) – stipulates that it will enhance learning, including increased motivation, engagement, and deeper levels of understanding. Communications technologies – such as online forums – enable students to discuss class material in an asynchronous manner. This communication channel supports discussion outside the classroom and is flexible for students that work full-time.

Kanuka and Anderson (1998) used a constructivist interaction analysis model to evaluate learning in an online community. However, their analysis revealed that most of the online interactions were limited to the social interchange rather than the creation of knowledge. The authors indicate that this finding was a product of their choice of forum – an information-share forum was used instead of an educational forum.

McDonnell (2000) compared students in a tourism and leisure management class that were taught with either a traditional or electronic tutorial. A tutorial is a period of class outside the ‘regular lecture class’ where lecture material is discussed between students and a teacher assistant or a professor. Communication in the electronic tutorial was asynchronous. No between-group differences were found regarding grades. However, students seemed to prefer the electronic tutorial due to the flexibility it offered and the fact that a permanent record was available for future reference.

A study of online forum usage in a graduate science education course showed that contributions by students were more detailed and deliberate when interacting online compared to face-to-face interactions (Rodrigues, 1999).

These examples indicate that the use of online discussion forums is becoming prevalent. The first study did not find evidence of knowledge construction – mostly because the analyzed material belonged to a knowledge-sharing forum. The second study found a preference for online forums; but no effect on educational achievement. The third study found

that forums are capable of promoting analytical thinking. This paper presents a study that investigates the influence of online forums on perceived benefits and course satisfaction in a graduate business class.

The main motivation was to appraise the use of online forums as a teaching tool in higher education. The forum was created to obtain an asynchronous communication mechanism about topics covered in class. The author expected to introduce students to the practice of critical thinking and peer discussion.

I. BACKGROUND

ESPAE – Graduate School of Management at Escuela Superior Politécnica del Litoral offers post-graduate degrees in part-time and executive modalities. The study focuses on a part-time course that met from 6:30 PM to 9:30 PM for 10 days within a three-week period. This was an introductory graduate business course: Communication Leadership. Due to the compressed format of this course, it was necessary to find a practical device to discuss relevant material outside class hours. Online forums provide such functionality. In addition, being a communication course, the forum was an example of a different medium for communication.

II. METHOD

A. Participants

The sample for this study consisted of 21 students enrolled at the first year-level of a MBA program. There were 11 females and 10 males. The average age was 29, with a standard deviation of 4.2 years. Sixteen students worked full time and all possess an undergraduate degree.

B. Software

The instructor used Google Groups to manage the online forums: the forum was private and membership was restricted to enrolled students. Students could access the forum using a web browser or by subscribing to receive mail.

C. Procedure

Forums were due every day during the course duration, except for the last day of class. The forum included topics that involved active student discussion and student postings of specific class information. Students were assigned to discuss the class readings online and some assignments were mandatory. There were six paper discussions and three project updates¹. Three paper discussions were mandatory. For those cases, the requirement was to post at least one ‘original comment’ about the assigned reading and one ‘extension comment’ responding to a contribution from a classmate.

Forum Class 3:

Fielden, J.S. (1982). What do you mean you don't like my style? *Harvard Business Review*, 60, 128-138.

Questions:

- Mention something you found interesting in the article and compare it to a professional or academic experience.
- Do you agree with the author's opinion regarding the four responses presented on pp. 130-131. Explain.
- Fielden (1982) mentions that various professions prefer different styles. Do you think this statement is accurate?
- Do you believe that different cultures have predispositions for different styles? Can you give examples? (Be sure to provide references to strengthen your arguments.)
- ...

Fig. 1. Extract from the instructor's initial message of a paper discussion forum.

An example of a paper discussion forum is presented in Figure 1. The non-mandatory forums did not have requirements. Students were required to post before class started. Discussion in the online forum was limited to students. The instructor did not participate. Discussion topics were covered later in class. Several ad-hoc forums were created both by the instructor and students: three instructor-created ad-hoc forums shared information about news items related to the class and three student-created ad-hoc forums requested information related to other assignments.

IV. RESULTS

A. Forum Usage

As seen in Figure 2, almost all students participated in the mandatory paper discussions – contributing with both original and extension comments. The number of postings did not decline with time. This was not the case for non-mandatory forums, see Figure 3. Over 80% of the students participated in the first two non-mandatory forums, while approximately 30% of the students participated in the last non-mandatory forum.

There were eight posts in the ad-hoc instructor-created forums and eight posts in the ad-hoc student-created forums. One single student contributed with four posts total in the ad-hoc forums.

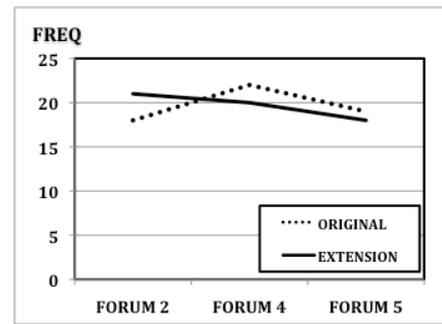


Fig. 2. Forum usage for Mandatory Paper Discussion Forums.

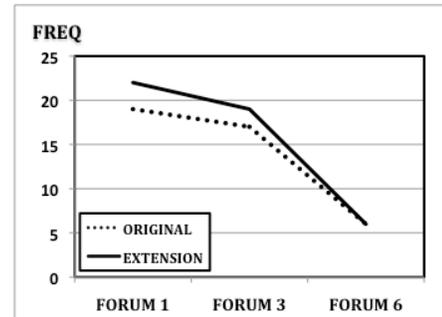


Fig. 3. Forum usage for Non-Mandatory Paper Discussion Forums.

B. Students' level of critical thinking

The level of critical thinking was measured by applying the model and taxonomy of critical thinking mentioned in Thomas (2002). Comments were assigned to one of the following three levels of critical thinking:

- a. *Low*: comments that display a lack of critical thinking.
- b. *Medium*: comments that display only minimal evidence of critical thinking.
- c. *High*: comments that display a high level of critical thinking.

TABLE I
DISTRIBUTION OF COMMENTS PER LEVEL OF CRITICAL THINKING

	Level of Critical Thinking		
	Low	Medium	High
Forum 1 (non-mandatory)	31.43 (n=11)	22.86 (n=8)	45.71 (n=16)
Forum 2 (mandatory)	22.50 (n=9)	12.50 (n=5)	65.00 (n=26)
Forum 3 (non-mandatory)	27.78 (n=10)	16.67 (n=6)	55.56 (n=20)
Forum 4 (mandatory)	40.00 (n=14)	8.57 (n=3)	51.43 (n=18)
Forum 5 (mandatory)	21.05 (n=8)	26.32 (n=10)	52.63 (n=20)
Forum 6 (non-mandatory)	40.54 (n=15)	37.48 (n=14)	21.62 (n=8)

The distribution of comments shown as a percentage of the total under the three levels of critical thinking.

Table 1 shows the distribution of comments in these three categories; the majority of comments show evidence of high critical thinking. The only forum in which the majority of comments have a low level of critical thinking is the last

¹ Project discussion forums will not be discussed in this paper.

forum. This forum was non-mandatory and was due on the same day as another major class assignment.

C. Student Interaction

A social network analysis was performed to determine whether students' extension comments were fairly distributed among the entire class. This was not the case; there were four students to which most of the students responded (Students 1, 2, 19 and 20 – see Figure 4). Analysis of the characteristics of these four students did not reveal any particular pattern. They did not post more or earlier than others and their contributions were not significantly different regarding the level of critical thinking.

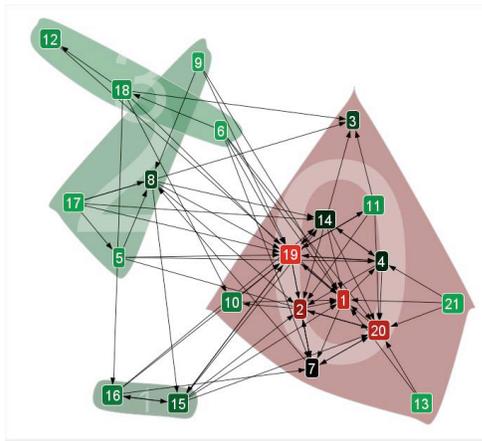


Fig. 4. Social Network of Extension Comments in the Forums.

Although a semantic analysis was not performed on the data, most of the extension comments were in agreement with whomever it was directed to. Very few students disagreed with a fellow classmate.

Further analyzing student characteristics, an interesting pattern emerged (see Table 2). The least significantly frequent extension comments were those directed towards male students ($\chi^2(1)=5.95, p < .05$). Exploratory data analysis did not reveal a particular reason for this finding.

TABLE 2
GENDER INTERACTION IN FORUMS

Direction of Interaction	Freq.
Male – Male	10
Male – Female	28
Female – Male	15
Female – Female	24

D. Student Survey

The descriptive statistics for the student survey are shown in Table 3. Students considered their technology access to be uncomplicated and were comfortable with the level of social interaction that the online forums promoted. They were also quite comfortable with their communication skills.

Students had a positive attitude towards the forums and

how their objectives related to class material and promoted debate among their peers. They were motivated to post online and believed that the project-update forums helped them organize their project activities. The course difficulty was according to students' expectations. All the students that answered the survey said they would recommend the course to other students.

Students were asked to describe the strengths and

TABLE 3
DESCRIPTIVE STATISTICS FOR STUDENT SURVEY

	M	SD
TECHNOLOGY ACCESS		
I can easily access the Internet for my studies.	5.11	1.37
SOCIAL INTERACTION		
I am comfortable communicating electronically.	5.11	1.32
I am willing to actively communicate with my classmates and instructors electronically.	5.22	1.11
I like to have interaction with my professors.	5.72	4.61
I can ask my teacher and get answers quickly using the Internet outside of class time.	4.94	1.06
I can discuss with other students in online activities.	5.11	1.13
COMMUNICATION SKILLS		
I feel comfortable with my written communication skills.	5.33	.69
I have the typing skills needed to do work online.	5.33	.91
I feel comfortable writing on a computer.	5.56	.78
FORUMS		
The objectives of the forums were clear.	4.78	1.11
The forums support meeting the course objectives.	4.94	.87
The number of appropriate forums.	5.00	.97
Discussion forums complement the material covered in class.	5.00	1.13
The questions related to the readings touched the concepts covered in the course.	5.28	1.07
Questions related to the readings promoted a positive discussion among peers.	5.28	.96
MOTIVATION & ORGANIZATION		
I feel motivated to post comments.	5.06	1.16
The forums for the team project helped organize activities related to the project.	4.94	1.11
CLASS		
Course difficulty was in accordance with my expectations.	5.11	1.33

Students indicated their level of agreement with each statement in a 6-point Likert Scale (1=Completely Disagree and 6=Completely Agree).

weaknesses that they believed the online forums had. Students named immediacy, flexibility and having a permanent record of the discussion as the major strengths. Among the weaknesses, some students complained that they did not have Internet access and it was hard for them to participate. Other weaknesses related to the quality of the content and poor participation in non-mandatory forums. One student requested for the professor to set up a class discussion for the topics covered online.

Students were asked to suggest other activities that could be performed using online forums. They suggested using them for non-academic communication and including audiovisual material like graphs and videos.

V. CONCLUSIONS

The results of this study indicate that online forums enable dialogue and effectively reinforce material covered in class. Students in this class did not know each other beforehand and yet all of them interacted to a certain degree with each other. There were four particular students to which most comments were directed. However, no special characteristics seemed to explain this high interaction.

A content analysis on lecture discussions was not performed. However, the author observed that online contributions were richer and more methodical than in-class contributions. Further, content analysis of the online discussions revealed high degrees of critical thinking among students. They behaved as active agents responsible for the construction of their own knowledge (Nachmias et al., 2000).

Frequency of forum usage was as expected and predicted by previous research. Although students mentioned technical difficulties, absenteeism in mandatory forums was minimal. Unlike those mentioned in Nachmias et al. (2000), the students in this course fulfilled only the minimal requirements for the mandatory forums (two posts: one original and one extension). Nevertheless, participation was observed in the non-mandatory forums.

Students showed a positive attitude towards online forums. Negative comments were directed towards peer participation (students wanted more, faster and reflective contributions). Students suggested that the forums could be used in various other activities – both academic and non-academic – and in other classes. There was a request for the professor to discuss the reading an additional time in class. Assigning additional class time to discuss the reading defeats the purpose of having an online forum – to discuss relevant material outside class hours. Two possible solutions come to mind: (i) Mazzolini and Maddison (2005) mentioned that students value ‘wrap-up’ posting by the instructor at the end of each discussion forum. Include a final posting from the instructor or teacher assistant. (ii) Or, mention relevant discussion comments during lecture and address any unanswered doubts. The author is employing this last solution in a current course and has noticed that students seemed pleased whenever one of their comments is mentioned during lecture.

A limitation for the findings in this study is that the author was the instructor for the course. A social desirability bias could have influenced their responses. Social desirability is the tendency of individuals to seek approval (Crowne & Marlow, 1960). In an attempt to minimize this bias, the survey was administered eight weeks after the course ended and grades had been submitted.

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