Effect of Using Online Discussion Forums on Students

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Abstract

This study was conducted to investigate the effect of using online discussion forums (ODFs) on students' learning, particularly on their achievement. The findings indicate that using ODFs is likely to lead students to gain a better achievement. In addition, statistical analyses reveal significant and positive relationships between student participation in ODFs and their final course mark, but no significant relationships between their participation in ODFs and grade point average. This study was conducted to review the dimensions affecting student participation in online discussion forums (ODFs) from the literature and to investigate these dimensions from students' perspective based on their actual use of ODFs.

Keywords —.Online discussion forums (ODFs), achievement, higher education

1. INTRODUCTION

Online discussion forums (ODFs) are widely implemented in university contexts as an important part of the teaching and learning process. The social online environment in which ODFs are integrated into traditional learning classes could be considered as an application of the social constructivism theory. Students may contribute to the ODFs by submitting a high number of posts and may read less or none;, that is the quantity of participation. Therefore, it is important to keep students participating continuously and intensively since this leads to better learning outcomes and higher satisfaction.

2. LITERATURE REVIEW

2.1. The effect of using ODFs on students' achievement

Student achievement is the ultimate goal of the educational process. Achievement can be defined as the grade that students obtain on their achievement tests. Through our experiment conducted in our college we conclude that online discussion forum is very useful for both student and teacher, through this student may learn new things and ask questions to their teachers online directly without wasting their time. Through online discussion forum teachers may also increase their knowledge. Teachers may help out students by providing answers of their questions. Through this online practise of asking questions and getting answers from verified faculties students may achieve good score in their exams.

2.2. Student participation in ODFs and their achievement

Participation in ODFs means the ability of students to write initial posts, such as writing a new topic, and to respond to academic staff and other students' posts as reply posts. Students who only read other student posts without making any contribution to the online discussion are known as lurkers, In our discussion forum student role is to ask any question and start the thread then this question is available to all who enrolled into our discussion forum, She/he stop this thread when they were satisfied by the answers by giving their suggestions.

2.3. Faculty participation in ODFs and their achievement

Role of faculty in our discussion forum is to provide appropriate answers of the questions asked by the student.

2.4. Research questions

This study aimed to investigate the effect of using ODFs on students' learning, particularly on their achievements by fulfilling the following research questions:

Q1- What is the effect of using ODFs on students' achievement?

Q2- What is the relationship between student participation in ODFs and their final course mark?

Q3- What is the relationship between student participation in ODFs and their prior grade point average?

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3. SIGNIFICANCE OF THE STUDY

The use of online discussion forums (ODFs) is not innovative in itself, but blending online discussion to extend traditional learning is a new approach. As this study intends through its findings to enhance traditional learning by providing more effective learning environments, this change in teaching approaches creates concerns about whether discussion in an online learning environment will enhance the learning process. Determining the effect of using ODFs, and how successful the implementations of it could be, is crucial prior to actual adoption. For this reason, gaining further understanding of the use and effect of ODFs is worthwhile.

4. METHODOLOGY

4.1 Design and sampling

We conduct our experiment in our college campus i.e. IMS ENGINEERING COLLEGE GHAZIABAD in 2018. Our college provides proper space and facility to did this experiment. In this study, convenience sampling was instituted which ended with a sample of three academic staff and 138 students from six classes who agreed to take part in this study during semester one, 2018-2019. The 138 students were enrolled at the Faculty of Education and had identical characteristics as they were undergraduates, studying full time on campus, males, and Indian citizens. The majority of them (135) were studying Special Education whereas three students in the experimental group were studying other courses. The grade point average (GPA) of the experimental group students (67) was as follows: 22 students had good GPAs, 43 students had very good GPAs and two students had excellent GPAs.

4.2 Course design

The 138 students involved in this study were enrolled in six classes, studying three different courses in educational technologies department. The students were divided into two groups: the experimental group involved 67 students within three classes and the control group involved 71 students within the other three classes. Each class of students in the experimental group was studying the same course as their counterpart in the control group, and was taught by the same academic staff member. The experimental group students were taught and then asked to participate in ODFs as blended courses, whereas the control group students were taught the same course and followed the same teaching method, but were not required to participate in ODFs. That means, in addition to the traditional class discussion, the experimental group students were exposed to an online discussion in an ODF for the same content as a supplementary pedagogical tool alongside their face to face classes, which was not the case for the control group students. Both groups, therefore, used the same textbooks and were exposed to the same content and instruction in the traditional classes. Thus, the grading scheme was the same for both groups.

4.3 Achievement tests

We took test of both the group who were using discussion forum or not. And then analysis the data of both the group[to find out that online discussion forum is beneficial or not , we also analysis the achievement which student get due to the help of discussion forum.

5. CHALLENGES AND LIMITATIONS

The scope of this study was limited to undergraduate students at a single university due to the accessibility and time issues. In addition, the high workload prevented the academic staff in the present study to engage with the students in the online discussion. Student had to focus on this experiment only. We had to arrange lot of resources for this experiment.

6. RESULT OF CORRELATION

The 67 students in the experimental groups were studying by using ODFs alongside traditional learning, while the 71 students in the control groups were studying by traditional learning alone. Both groups completed the achievement tests in three undergraduate courses. In regard to the pre-achievement test results, conducting the independent samples t-test shows no significant differences between the pre-achievement test mean scores of the experimental and control groups, indicating no significant differences in the background knowledge of the three courses between the groups before the experiment (t = .028, df = 136, p = .978). Moreover, the student grade point averages (GPAs) were collected to examine whether there were any significant differences in their general ability. The experimental group had higher mean score (M = 3.61) than the control group's mean score (M = 3.49). However, the independent samples t-test revealed that this was not statistically significant (t = 1.788, df = 136, p = .076). After that, the effect of each learning method was examined by using the paired sample t-test, as is shown in Table 1.1.

Table 1.1: Achievement Tests' Results of Students

Group	Group statistics					Paired samples test		
	Test	N	M	SD	SE	T	df	Sig. (2-tailed)
Experimental group	Pre test	67	10.09	3.460	.423	-6.543	66	.000*
	Post test	67	12.05	2.844	.347			
Control group	Pre test	71	10.07	3.178	.377	-3.861	70	.000*
	Post test	71	10.96	3.053	.362			

*p < .05.

It shows that students who learn things from online discussion forum may achieve good marks as compare to the those students who did not adopt learning from online discussion forum . The results in Table 1.1 reveal a significant difference between the pre/post achievement test mean scores of the experimental group at the .05 level (t = - 6.543, df = 66), suggesting that experimental students' achievement was significantly improved as a result of exposure to a combination of traditional learning and the use of ODFs. Similarly, a significant difference between the pre/post achievement test mean scores of the control group was found at the .05 level (t = - 3.861, df = 70), suggesting that achievement in the control group was significantly improved as a result of studying through traditional learning alone, which depended on the oral and PowerPoint presentations only. However, the paired t-test results do not show which group made higher gains. Therefore, theindependent samples t-test was used to examine the differences of the post achievement tests between the experimental and control groups, as is shown in Table 1.2.

Table 1.2: Post Achievement Test Results of Students

Group	Group statistics				Levene's test		T-test for equality of means		
	N	M	SD	SE	F	Sig.	T	df	Sig. (2-tailed)
Experimental group	67	12.05	2.844	.347	1.758	.187	2.168	136	.032*
Control group	71	10.96	3.053	.362					

*p < .05.

The test results in Table 1.2 indicate significant differences between the experimental and control groups post achievement tests mean scores in the three courses (t = 2.168, df = 136, p < .05), suggesting that achievement

in the experimental group was higher than in the control group at the end of the semester as a result of using ODFs alongside traditional learning. To conclude, the experimental group students had a higher achievement outcome score than the control group students. Online discussion forums (ODFs) analysis The students in each experimental class were supposed to complete 10 threads by submitting two weekly posts per student during 10 weeks of study. Table 1.3 shows the descriptive data of the three ODFs.

Table 1.3: Descriptive Data of Student Participation in ODFs

| Class | N (%*) | Total number of | | | |
		Threads N (%**)	Initial posts N (%**)	Reply posts N (%)	Posts N (%)
Class A	16 (23.88)	7 (70.0)	68 (42.5)	71 (44.38)	139 (43.44)
Class B	31 (46.27)	9 (90.0)	124 (40.0)	124 (40.0)	248 (40.0)
Class C	20 (29.85)	10 (100)	82 (41.0)	75 (37.5)	157 (39.25)
Total	67 (100)	26 (86.67)	274 (40.9)	270 (40.3)	544 (40.6)

* These percentages are out of the total number of participants. ** These percentages are out of the total number of the required threads that was 10 threads per class (e.g., students in Class A participated 70% of the required threads) or the required posts, that was one initial post and one reply post per participant weekly (e.g., students in Class A submitted 42.5% of the required initial posts, that was160 initial posts).

Table 1.3 shows that the three classes did not complete the required tasks in terms of the total number of threads, with the exception of Class C. It is noteworthy that none of the three classes had even completed half of the required number of posts. Although the lowest number of students was in Class A, who had the lowest proportion in terms of the completed threads, they had the highest proportion in terms of the submitted posts inODFs. Thus, this class was the most active class, whereas Class C was the least active class. In addition, the number of students between the three classes was unequal and had a positive relationship with the total number of posts. The number of the weekly posts was also mixed within each class and between the three classes, as is shown in Figure 1.1.
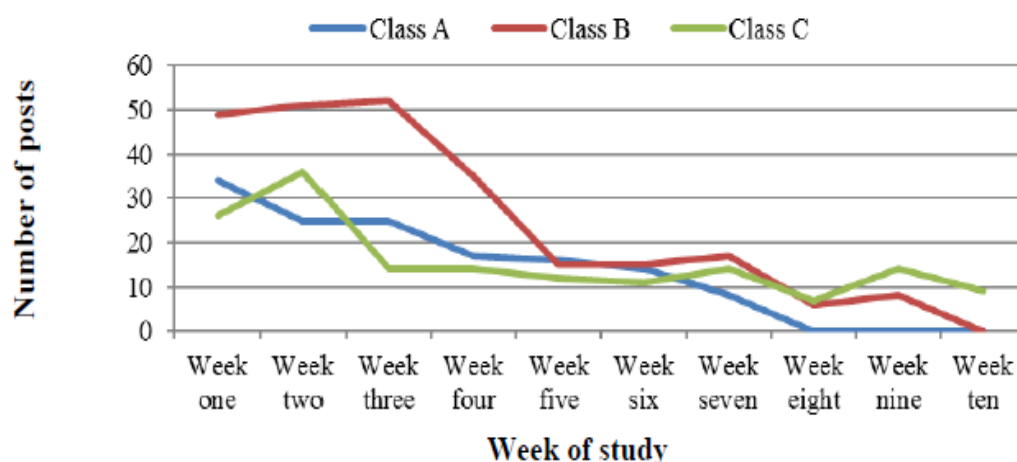

Figure 1.1: The number of students' weekly posts in ODFs

7. CONCLUSION

The findings of the achievement tests and the quantitative data of student participation in ODFs suggest thatusing ODFs to enhance traditional learning may contribute to students' achievement, particularly when students are engaged in ODFs effectively and efficiently. This is possibly because using ODFs can allow students to participate equally, work socially and collaboratively, and engage in active learning.

8. ACKNOWLEDGEMENT

9. REFERENCES

[1] Akyol, Z., & Garrison, R. (2011). Understanding cognitive presence in an online and blended community of   inquiry: Assessing outcomes and processes for deep approaches to learning. British Journal ofEducational Technology, 42(2), 233- 250.

[2] Al-Fahad, F. N. (2010). The learners' satisfaction toward online e-learning implemented in the college of applied studies and community service, King Saud University, Saudi Arabia: Can e-learning replace the conventional system of education? Turkish Online Journal of Distance Education, 11(2), 61-72.

[3] Al-Ibrahim, A., & Al-Khalifa, H. S. (2014, November). Observing online discussions in educational social networks: A case study. Paper presented at the International Conference on Web and Open Access toLearning, Dubai, United Arab Emirates.

[4] Al-Ismaiel, O. A. (2013). Collaborative blended learning with higher education students in an Arabic context.Unpublished doctoral dissertation, University of Wollongong, Wollongong, New South Wales, Australia.

[5] Al-Jarf, R. S. (2002, June). Effect of online learning on struggling ESL college writers. Paper presented at the 23rd National Educational Computing Conference, San Antino, Texas,US.