

A Comparative Study on Student Perceptions of Face-to-Face Learning and Online Learning

GURHAN CAN, MUSTAFA SAGLAM, BAHADIR ERISTI, DILRUBA KURUM

Department of Educational Sciences

Anadolu University

Yunusemre Campus – Eskisehir

TURKEY

gcan@anadolu.edu.tr <http://home.anadolu.edu.tr/~gcan/>

Abstract:-This study was conducted to understand students' perceptions of the effectiveness of online and face-to-face learning for a graduate course. 93 Phd students who took the course of Planning And Assessment In Education on the basis of face-to-face learning and 76 Phd students who took the same course on online basis at Anadolu University in Turkey were requested to state their views about the course in terms of 7 different points by marking the options of 7 statements prepared for this purpose. The findings revealed that the teaching method they followed was effective with the rates ranging from 50,6% to 72% for face-to-face students and from 45% to 65% for online students. The responses given to three statements revealed that face-to-face learning was significantly more effective than online learning, and the responses given to one statement showed that the latter was significantly more effective than the former ($p < .05$). For the other three statements, there were no significant differences between effectiveness of the two teaching methods. The online learners (online 1 students) who held the discussions in WebCT chat rooms and took technical support via e-mail and those (online 2 students) who took such services in Macromedia Breeze Virtual Classes agreed, with the rates ranging from 38,2% to 71%, that the teaching method they followed was effective. The relationships between the perceptions of the online learners and the ways they used the services stated above were not significant ($p > .05$).

Key-Words:-Online learning, Face-to-face learning, Effectiveness, Student perceptions

1 Introduction

In recent years, the educational opportunities that the internet provides have increased the use of online applications in educational institutions. Although several educators have doubted that online learning may not be as effective as face-to-face learning, we know that students generally learn online as much as they do in traditional classrooms [1]. While in many of the studies that compared the effectiveness of online learning with that of face-to-face learning, researchers haven't demonstrated any significant difference, other researchers have found that there are significant differences in the effectiveness of either face-to-face learning or of computer-mediated online learning [2]. There are a great number of studies that have proved no significant differences between exam results of online students and those of face-to-face students [3]-[11]. However, there are cases in which online learning is reported to be more effective than face-to-face learning [12]-[17], some research findings revealed that face-to-face learning is more effective than online learning [18]-[20]. These make us think that online

education should not always be considered as the safest way of teaching.

In literature, there are studies that have reported student perceptions about the effectiveness of face-to-face learning and of online learning, yet it is also seen in many studies that for this purpose, researchers generally prefer to compare the exam results of students [21]. Other researchers, criticizing this situation, state that this type of evaluation may not always be functional and the safest. They further believe that research designs based on student perceptions might serve the purpose better and that this type of studies could help instructors develop more effective discussions [22]-[23]. Studies based on exam results and student perceptions indicate that to a great extent, both online learners and face-to-face learners are satisfied with educational method they followed. In a study which compared the exam results of two groups of students and their perceptions about the effectiveness of a course, the same instructor taught one group of students on the basis of face-to-face learning and the other group on online basis. It was found in the study that the exam grades of online

learners were higher yet that the perceptions of face-to-face students about the effectiveness of the course were more positive than those of online students. Thus, it was concluded that the two types of courses were different from each other in terms of learning outcomes and of student satisfaction with the course [13]. On the other hand, another researcher compared the exam results and perceptions of two different groups of students, one taking the same course on the basis of face-to-face learning and the other on asynchronous online basis. The researcher found that the two different teaching methods did not differ significantly in terms of academic performance yet reported that 96% of online learners found the course more effective than, or at least as effective as, face-to-face learning [24]. In a study which investigated the effectiveness of face-to-face learning and of online learning and compared the exam results and perceptions of students, it was revealed that the exam results of online learners were significantly higher than those of face-to-face learners and that student perceptions regarding the two different teaching methods were positive in both of the groups [25]. In a study carried out at the end of an online nursing seminar, the perceptions of both instructors and students were positive [23]. In another study which investigated whether 90 online courses at a university were effective or not, students reflected positive or negative perceptions about effectiveness of courses. It was also claimed in the study that the quality of internet-based teaching was an important issue [22]. In one of the recent studies that have searched the effectiveness of face-to-face learning and of online learning, it has been reported that the views of students and of instructors about the effectiveness of the two teaching methods are not different, yet it has been revealed that both students and instructors are more satisfied with online education [26].

The results of the studies that investigate the effectiveness of face-to-face learning and of online learning show that there is still a need for research that takes the issue into consideration in terms of different disciplines.

2 Purpose

The present study, taking student perceptions into consideration, aims at comparing the effectiveness of the course of "Planning and Assessment in Education," which was given to Phd students on the basis of traditional face-to-face learning between 2000-2004 and on online basis in the academic year of 2005-2006 at Anadolu University in Turkey, The study addresses the following research questions:

1. Are there any significant relationships between the perceptions of students who were taught the course using a web-based approach and the perceptions of students who were taught the same course using a face-to-face approach?
2. Are there any significant relationships between the perceptions of students who took technical support via e-mail and held discussions in WebCT chat rooms and the perceptions of students who took both of such services in Macromedia Breeze Virtual Classes?

3 Methodology

In order to seek answers to the research questions directed, ex-post-facto design was used in the study because the students had taken the course of 'Planning and Evaluation in Education' either in traditional classes or in a web-based environment.

3.1 Participants

A total of 169 Phd students, who took the graduate course of 'Planning and Evaluation in Education' at Anadolu University between 2000-2006, participated in the study. 128 of the participants were research assistants, 31 were lecturers, and 10 were others working out of the university.

93 of the 169 students took the course between the academic years of 2000–2004 in the term of either Fall or Spring on the basis of face-to-face learning, and 76 of all the students took the same course in Spring 2005, Fall 2005 or in Spring 2006. In Spring 2005, 34 of the latter group of students, and in Fall 2005 and Spring 2006, 42 students of them participated in asynchronous and synchronous educational activities in different ways.

3.2 Instrument

The perceptions of students about the effectiveness of the course were found out through their responses to the statements prepared for the purpose of determining how they perceive the course taking 7 different points into consideration. A jury of 14 field experts was asked to evaluate an initial draft of 12 statements. Following this, we decided to reveal the student perception by asking the students to mark one of the 5 options for each of the following 7 statements:

1. This course was useful for me to learn the necessary information and skills in teaching.
2. This course helped me become aware of my weaknesses in teaching.

3. I believe that having taken this course, I will be able to teach more effectively in my field.
4. This course helped me understand and solve the problems I experienced while teaching in class.
5. The content of the course was comprehensive enough for me to expand my knowledge and develop my skills in teaching.
6. This course helped me develop better relationships with my students in the department.
7. This course was useful for me to become a more effective instructor in future.

3.3 Procedure

For the 93 face-to-face learner, the instructor, using different types of teaching methods, tried to have the students participate in the lesson. Using especially cooperative teaching methods, the instructor tried to keep in-class interaction active. Furthermore, having the students prepare projects and do the assignments given, the instructor gave them the opportunity to study on practical basis.

The learning activities for the 76 online learners who took the same course were carried out with the help of asynchronous and synchronous communication technologies. Notwithstanding, the asynchronous and synchronous learning activities carried out in Spring 2005 were not exactly the same as those carried out in the following terms. The services of technical support were given to the 34 students via e-mail in Spring 2005, and the synchronous discussions were held in WebCT chat rooms. However, the 42 students took the supportive services and held the synchronous discussions in Macromedia Breeze Virtual Classes in Fall 2005 or in Spring 2006. As asynchronous learning activities, the students studied online course materials, discussed weekly course topics in discussion forums, and discussed power-point presentations and the questions of discussion topics; the students, as a group of 3 to 5, prepared and published reports in forums and examined similar types of studies carried out by other groups; and the assistant instructor provided students with services of technical support via e-mail and the students did the assignments given to them. As synchronous learning activities, the instructors held weekly discussions for students in WebCT chat rooms and in Macromedia Breeze Virtual Classes, and the assistant instructors provided students with services of technical support.

3.4 Data Analysis

In order to find out whether the perceptions of students about the effectiveness of face-to-face and online

learning activities carried out for 169 participants were independent of the teaching method, chi-square tests were applied (chi-square tests 1a-7a). Similarly, chi-square tests (chi-square tests 1b-7b) were also run to reveal if there were significant relationships between the online learner's perceptions at online teaching and the ways they used the online services of technical support as well as the discussions.

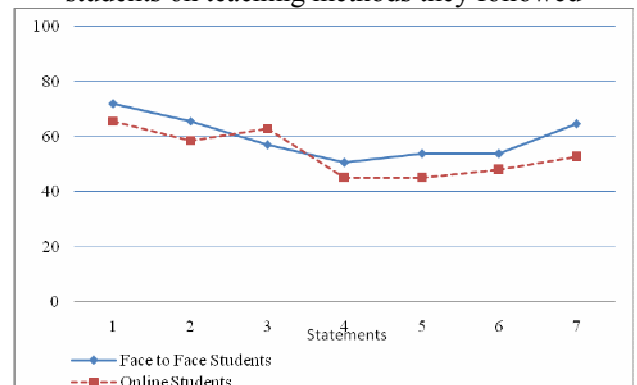
4 Results

This part includes the findings regarding whether the student perceptions about the effectiveness of face-to-face and online learning activities were independent of traditional or online education and the findings regarding whether the perceptions of online students were independent of the ways they used the online services of technical support and the discussions.

4.1 Perceptions of Students Regarding the Teaching Methods

Figure 1 shows positive views of the face to face and online learners on teaching methods they followed. Face-to-face learners and online learners (with the rates of 72% and 65,7% respectively) responded positively to the first one of the statements that were prepared for the purpose of revealing the perceptions of face-to-face and online learners about the effectiveness of the teaching methods. The chi-square test was not significant $\{\chi^2(1a) = 5,496, p > .05\}$. This result demonstrated that for the course of Planning And Evaluation In Education, online teaching was at least as effective as face-to-face teaching in terms of having students learn information in the field and acquire skills in teaching.

Fig. 1. Positive views of the face to face and online students on teaching methods they followed



Face-to-face learners (65,6%) and online learners (58,6%) reported positive views about the second statement. The chi-square test was not significant $\{\chi^2(2a) = 5,43, p > .05\}$. In the light of this result, it was seen that both of the teaching methods equally helped students become aware of their weaknesses in teaching skills.

The agreement rate of online learners (63,4%) with the third statement was found to be higher than that of face-to-face learners (57%). The chi-square test was significant $\{\chi^2(3a) = 12,59, p < .05\}$. This result led to a thought that online education was more effective having the learners gain teaching skills when compared to face-to-face education.

Face-to-face learners and online learners agreed with the fourth statement with the rates of 50,6% and 45% respectively. The chi-square test was not significant $\{\chi^2(4a) = 5,521, p > .05\}$. This result showed that there were no significant relationship between the perceptions of students related to instruction in class and the teaching method were followed.

The responses given to the fifth statement which was about how comprehensive the content of the course was revealed that face-to-face learners (53,8%) found the content of the course more comprehensive than online learners (45%) did. From the chi-square test, $\{\chi^2(5b) = 15,957, p < .05\}$, it was understood that there was a significant relationship between the perceptions of students and the teaching method they followed.

Face-to-face learners (53,8%) and online learners (47,9%) responded positively to the sixth statement which was related to whether the course contributed to the development of the relationships between the participants of the study and the students in the department. The relationship between the perceptions of face-to-face learners and of online learners about the sixth statement and the teaching method was found significant $\{\chi^2(6a) = 13,458, p < .05\}$. This result showed that face-to-face teaching could be more beneficial for the development of teacher-student relationships.

The last statement was for revealing the perceptions of students about whether the course was useful for them to become more effective instructors in future. Face-to-face learners (64,6%) and online learners (52,7%) reported that the course was beneficial in the stated respect. The chi-square test showed that the student perceptions were significantly dependent of the teaching method they followed $\{\chi^2(7a) = 16,434, p < .05\}$.

4.2 Perceptions of Students Regarding Discussions and Online Support

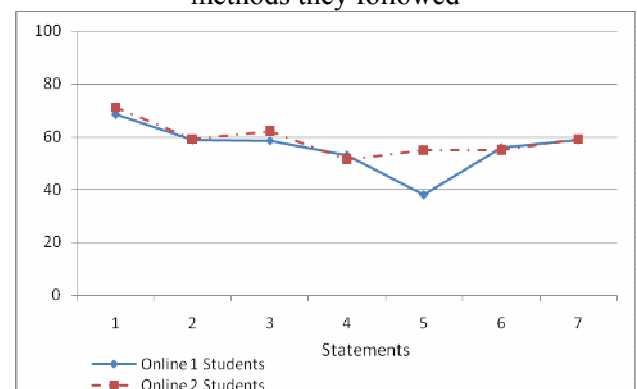
Figure 2 shows positive views of the online learners on teaching methods they followed.

The learners (online1 students) who took the supplementary services via e-mail and held the discussions in WebCT chat rooms and the learners (online 2 students) who carried out such activities in Macromedia Breeze Virtual Classes responded positively to the first statement with the rates of 68,4% and 71,2% respectively. They reported that that online learning helped them learn the necessary information in the field and acquire the teaching skills. The chi-square test was not significant $\{\chi^2(1b) = 2,372, p > .05\}$. This result means that online learners had positive perceptions about the effectiveness of this teaching method, yet their positive perceptions were independent of the ways they used online activities.

Online 1 students (58,8%) and online 2 students (59,2%) agreed with the second statement and reported that they found the course useful as it helped them become aware of their weaknesses in teaching skills. The chi-square test was not significant $\{\chi^2(2b) = 0,214, p > .05\}$. This result showed that between their perceptions regarding the effectiveness of the teaching method and the ways the students used the services of technical support and the discussions.

Online 1 students (58,6%) and online 2 students (61,9%) agreed with the third statement and pointed out that they were now able to teach better. The result of the chi-square test was not significant $\{\chi^2(3b) = 6,659, p > .05\}$. This result suggested that the discussions and the services of technical support did not change the student perceptions about their qualification as a candidate instructor

Fig.2. Positive views of the online students on teaching methods they followed



As for the fourth statement, online 1 students (52,9%) and online 2 students (51,2%) stated that the course was useful for understanding and solving the problems related to instruction in class. The chi square test was not significant $\{\chi^2(4b) = 2,900, p > .05\}$. This result, like the previous ones, shows that the discussions and the technical support services did not lead to any significant changes in the perceptions of students about instructional problems in class.

Online 1 students (38,2%) and online 2 students (54,9%) responded positively to the fifth statement which was about how comprehensive the course content was. Although the students agreed with the fifth statement at different rates, the result of the chi-square test was not significant $\{\chi^2(5b) = 6,992, p > .05\}$. This result demonstrated that there were no significant relationship between their perceptions about how comprehensive the online education was and the types of the discussions and the technical support services provided for them.

The responses given to the sixth statement which was about whether the course contributed to the development of in-class interactions with students in the department were not significantly related to the types of discussions and the technical support services provided for online learners $\{\chi^2(6b) = 2,080, p > .05\}$. For this statement the rates of student perceptions were 55,9% for online 1 students and 54,8% for online 2 students.

Online 1 students (58,8%) responded positively to the seventh statement which was about whether the course was useful for becoming an effective instructor. Similarly online 2 students (59,2%) had positive responses to the same statement. The chi-square test was not significant $\{\chi^2(7b) = 2,125, p > .05\}$, like the previous ones. This result showed us the perceptions of online learners about whether they would become qualified instructor or not, were independent from the ways of the technical support services and the discussions in online education.

5 Conclusion

The findings of this study do not support the common thought in the related literature that online education is at least as effective as face-to-face education. Moreover, the results fairly contradicted with other studies which found that online education is more effective than face-to-face education. Student perceptions regarding which of the two teaching methods is more effective revealed that according to three of the seven statements, face-to-face education is more effective and that online education is more

effective when one statement is taken into consideration. As for the other three statements, it was found that one teaching method is not superior to the other. However the results show that online education could be as effective as when teaching certain subjects. The results also demonstrate that the research designs of other studies which, comparing only the exam results of students, found that online education is as effective as face-to-face education may not always be functional. The present study is a good example of such studies which found varying results when the research design is based on student perceptions. Another conclusion reached in this study is the different kinds of technical support services and discussions in online education do not facilitate student's learning. In this respect, the results of this study suggest that educators must think critically about how they using technology, and develop more effective instructions for online educational activities.

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