Mevlana International Journal of Education (MIJE)
Vol. 3(2), pp. 43-56, 1 August, 2013
Available online at http://mije.mevlana.edu.tr/
http://dx.doi.org/10.13054/mije.13.26.3.2

Effect of the blended learning environment and the application of virtual class upon the achievement and the attitude against the geography course

Yurdal Dikmenli*
Ahi Evran University, Faculty of Education, Department of Primary Education, Kırşehir, Turkey

Ülkü Eser Ünaldi
Gazi University, Gazi Faculty of Education, Department of Geography Education, Ankara, Turkey

Article history
Received:
26.04.2013

Received in revised form:
08.05.2013

Accepted:
10.05.2013

Key words:
Blended learning, virtual classroom application, Geography education, web based education

This study involves the elucidation of the effect of the virtual classroom application and blended learning medium upon the academic achievement of the students and their attitudes against the geography curse compared to the face to face expository (traditional) method. The study was carried out according to pre-test - post-test experimental design with control group. The group was constituted by 73, 9th year students. The experimental groups have been subjected to the blended learning approach throughout the study. The topic was also given to the first experimental group with the face to face expository method where the teacher explained the subject while the second experimental group was subjected to virtual classroom application. The course was given to the control group with the traditional face to face learning method. The data of the study were collected by the use of by the use of the geography achievement test (Kr-20=0.77) and the attitude scale towards the geography course (α=0,918) . The data collected were one factor variance and co variance analyses. The results showed that the blended teaching media and virtual classroom practices had a statistically significant contribution on the achievement of the students in geography and their attitudes towards the geography course compared to the face to face expository method. However since the attitudes of the students towards the geography course in both control and experimental groups at the beginning and the end of the experiment were high the methods used did not made a significant contribution to it.

Introduction

The modern educational programs demand the use of information and communication techniques. The purpose of this study carried out to support this assumption was to compare the web supported virtual classroom application and blended teaching method with the traditional face to face teaching techniques regarding their effects upon the achievement of the students in geography and their attitude towards the geography course. Although the studies related to geography education and geography programs have shown a marked increase in recent years they are yet to find a large implementation in our country due to various reasons. In spite of all these bottle necks, the development of new programs, utilizing new learning methods and equipping the students with the geographical skills are of utmost importance for the future of our country (Demiralp, 2006, p.30).

* Correspondence: Ahi Evran University, Faculty of Education, Department of Primary Education, Kırşehir, ydikmenli@ahievran.edu.tr

In this study we aimed to create a new model in geography education by the use of blended teaching methods and virtual classrooms .This is thought to be important milestone in geography education in Turkey since it has never been used before. The blended learning medium and the virtual classroom application which are the main part of this study are explained below.

Blended learning

The blended learning is a type of education combining various model of face to face and distance education model by using all the facilities of technology (Sutra, 2007). In other words it is the combination of face to face and on line learning (Figure 1). The blended learning also combines the strongest sides of the face to face and web supported education (Horton, 2000).

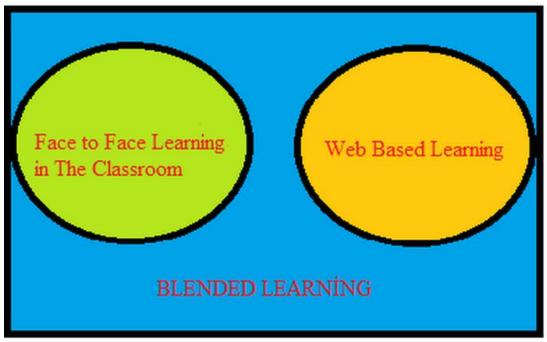

Figure 1: The blended learning medium supported by the face to face interaction in classroom

The first thing to be decided when designing a blended learning environment is determination of the part of the topic to be used in blended learning and the part that will be used in the classroom (Usta, 2007). The most common practice was merging the topic half to half. The levels of the face to face and on line supports is dependent not only the on the decision of the applier but also on the physical conditions. The application level of the on line methods determines the content presented and the balance between the learning methods. LMS (Learning Management System) is the most suitable method for the transfer of the contends to the face to face method which otherwise is very difficult to present and enables us to repeat the content depending upon the learning level and facilitates the online submission of the texts. The information to be repeated determines the extend of the face to face and on line applications in the blended process (Budak Y. and Çoban Budak E. 2012. p.49).

The blended learning generally requires educational approaches and participatory managed and controlled activities. According to Moore (1989) participatory controlled learning process corresponds to the arrangement of the students of their self-learning processes. During this learning process the students shoulder much greater responsibility in the planning stage of their educational goals, activities and the evaluation of their targets according to their needs and skills. The teachers are merely the assistants to provide regulations, feedbacks, and questions and determine the most suitable educational fields for the students. As an assistant the teacher is supposed to evaluate the performance of the students and take feedbacks in order to realize the desired educational goals and actively guide them during this process. The *participatory managed teaching* means the students determine the time they allocate to their educational activities, their learning methods and the presentation of the output by the use of various sourcep. The participatory managed learning emphasizes the individual control

on the active participation and realization of the educational goal. The individual motivation is one of the most important concepts for the students in this process. In reality we need textbooks and the topics are to be taught with the activities in the framework of texts notes and within the time allocated to them. The course materials are to be presented by the multiple media tools, videos and the audio equipment to create a situation similar to the class room. Such a model enables the students to control of the space and the time during their learning process and may alleviate the lack of academic personnel in the universities.

Virtual Classroom Applications

Today the quality and the quality of the distance education approach to those of the face to face learning. The biggest advantage of the distance education is that its independency of time and space. The new information transfer technologies improved quality of the distance education .These changes brought about new concepts. One of these concepts is the concept of" virtual" described as the simulation of a real thing (Kaya, 2011).

These concepts had extensive reflections upon the education and change most of the attitudes in both on the face to face and the distance education. The most apparent reflections of the virtual -reality concept are the virtual learning and the virtual classrooms. Starting from the description of the "virtual "concept the virtual classrooms are described the education media which provides the similar education opportunities in real life classrooms (Kaya, 2011). The biggest advantage of the virtual classrooms against real life classrooms is the possibility of participating to the education process anytime anywhere in the world (Ebbers, Balague, Ganguly, Noyes ve Salm, 2003, p.4). The virtual classrooms are described as the coordinated on-line media where the students all over the world come together at the same time under the supervision of the same teacher (Clark and Kwinn, 2007); in other words they are interactive learning media dependent upon the time but not the location (Figure 2).

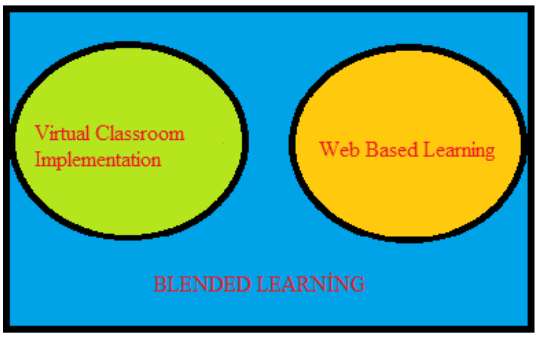

Figure 2: The virtual classroom supported blended learning environment

Depending upon the technology used, these media may be in the form of multi directional audio- visual and documentary communication. The lectures carried in such a way that may enable the students to who were unable to attain the lectures to follow it later after they had been recorded. The virtual classrooms provide highly flexible learning opportunities to the people regardless of time and location in the information societies where people are in constant demand of information (Kaya, 2011).

The Goal of the Study

The purpose of this study was the elucidation of the effect of the virtual classrooms applications and blended learning media, which are widely used in web supported education,

on the achievement of students in the geography education and the attitudes towards the geography course compared to the face to face learning. In other words the study has investigated effect of the use of the blended learning medium and the virtual classrooms application in geography compared to the use of the face to face learning. In this context the following questions are to be answered:

(1) Is there any statistically significant difference in the academic achievement of the groups in geography and their attitudes towards the geography course before the application of these methods?
(2) Does the application of the blended learning application and virtual classroom applications cause a statistically meaningful difference in the academic achievements of the students compared to the face to face learning?
(3) Does the application of the blended learning and virtual classroom applications cause a statistically meaningful difference in the attitudes of the students towards the geography course compared to the face to face learning?

Method

The Research Model

The research was carried out by the use of quantitative pre-test/ post-test experimental design with control group .The independent variables which have an effect upon the experimental groups were " the education with the use of the blended media " and "virtual classrooms ". The method employed in the control group was the face to face learning method.

Working Group

The working group of the study was constituted by 90 students studying in 9th class of the three different classes (classes M, N and O) of a high school located in the Centrum of Kırşehir province. 17 students which failed to take the pre or the posttest due to absence were excluded from the study. The final working group was constituted by 73 students. The distribution of the students in the experimental and control groups are listed in table 1.

Table 1: The distribution of the experimental and control groups according to gender

Groups	**Female**	**Male**	**Total**
I.Exp.	10	16	26
II. Exp	16	10	26
Control	16	5	21
Total	42	31	73

Collection of the data

Achievement test in geography course

The experimental activities were prepared to have the students acquire the gains listed in the 9th year geography program prepared by the Education and Training Bureau (TTK) related to the topic of natural systems. The students were subjected to an Academic Achievement Test with 30 multi choice questions, which the reliability and validity studies had been previously carried out, in order to determine the acquirement levels of the gains mentioned above. The selectivity of the items was 0.33 and the hardness levels ranged

between 0.13-0.77. The average hardiness was 0.33, internal consistency coefficient was KR-20= 0.77.

Geography Attitude Scale

The attitudes of the students towards the geography course were determined by the use of the Attitude Towards the Geography Course Scale developed by Özgen, Bindak and Birel (2007). It was three factor 20 items likert type scale. There were 11 negative and 9 positive items. The Cronbach alpha internal stability coefficients for the sub factors of the scale were determined to be 0.891, 0.831 and 0.785 respectively. The alpha coefficient for the whole scale was 0.918. The half test reliability coefficient of the scale was found to be 0.911 with the use of Sperman-Brown correction.

Education Medium

The experimental group I was taught with slides prepared in accordance with the topic of the Natural Systems 9th year programs and the learning management program supported with text notes and videos. The students in this group had an access the learning management system with a user name and a password. This enables the workers to determine the time of the access of the students, the period they stayed there and the activities they participated during their stay. The view of the activity selection screen used in the academic LMS activities is shown in figure 3.

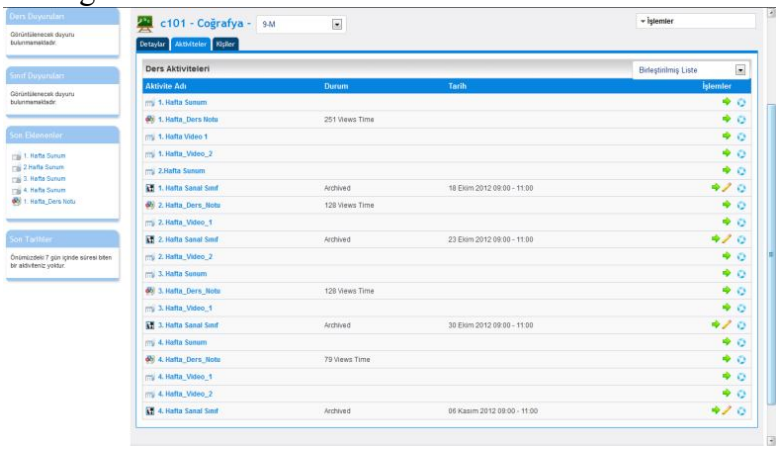

Figure 3: Activity selection screen of the academic LMS

The Unit of Natural Systems were separated into 4 week parts as stated the in the course plan. The students in the experimental group I were able to follow the slide shows, lecture notes and videos every week. In slide shows the topics of the related unit have been separated into appropriate parts and presented by the use of texts, pictures, figures, diagrams and animation. The topics presented every week were arranged as PDF files. The videos were presented by the explanation of the teacher. The videos were prepared by the use of an intelligent writing board and other materials related to the topic in the classroom media. The screen of a video show is shown in figure 4.

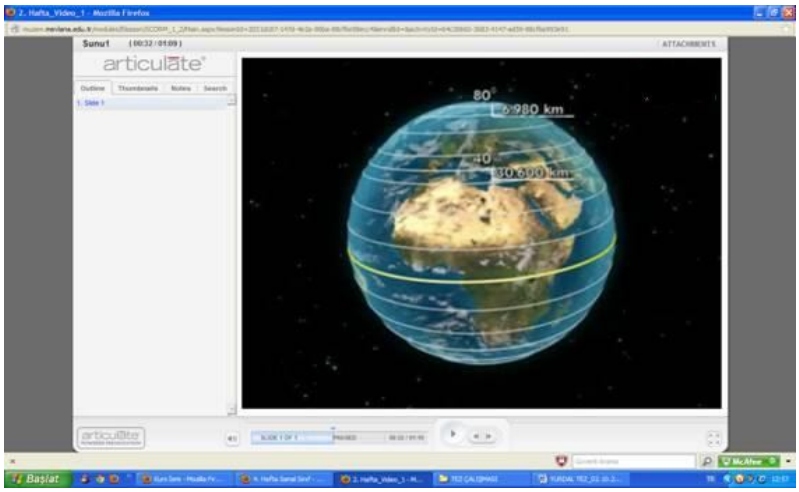

Figure 4: A picture of the screen of a video show

The experimental group II. was also taught with slides prepared in accordance with the topic of the Natural Systems 9th year program and the learning management program supported with text notes and videos. However different to the experimental group I the experimental group II was not subjected to a face to face learning in the classroom medium. Instead the students in the experimental group II were subjected to the virtual classroom application.

The virtual class room application establishes a coordinated communication between the teacher and the students. The virtual class room activities were spontaneous chatting, audio visual correspondence, white boards with file sharing features which facilitate an effective correspondence between the teacher and the students. These applications include the activities which the teacher and the students can carry out face to face manner and provide the education opportunities independent of the location. Also the teachers and the students can share the files in different formats (such as MS PowerPoint, MS Word, MS Excel, Adobe PDF, pictures, animation and video) in coordinated manner, access each other's screens, take spontaneous notes and carry out surveys. An example of virtual classrooms application is shown screens in figure 5.

Figure 5: An example of the screen of a virtual classroom

Data Analysis

The data thus obtained by the use of data collection tools have been subjected to arithmetic means, standard deviation, Anova and Ancova analyses at a significance level of 0.05.

Result

This section is devoted to the results and the evaluation of the data related to the equality of the groups and the effects of the face to face and blended learning with virtual classroom application upon the academic achievement of the students in geography and their attitudes towards the geography course.

The data related to the pretest equality of the groups

This section is related to determine whether there is any difference in the pretest results of the groups regarding to the effect of the blended learning and virtual classroom application upon the academic achievement of the students. Table 2 lists the pretest results of the experimental and the control groups regarding to academic achievement.

Table 2: The pretest results of the control and experimental groups regarding to academic achievement

Groups	**Academic Achievement**		
	$\overline{X}$	**sd**	**N**
I. Expt. Group (Blended Learning)	8,88	2,73	26
II Expt. Group (Virtual Classroom)	7,46	2,04	26
Control Group	7,14	3,10	21

When we examine table 2 it is seen that the pretest mean results of the experimental group I which were subjected to the blended learning, the experimental group II taught with the virtual classroom method and the control group which was subjected to the face to face learning were $\overline{X}$ = 8.88, , $\overline{X}$ = 7.46 and $\overline{X}$ =7.14 respectively. There is a certain difference between them. The pretest results were subjected to one way variance analysis to determine whether the difference between them was significant or not. The results are presented in table 3.

Table 3: The Variance Analysis of the total pretest results of the groups

Source of Variance	Sum of Squares	Df	Mean Square	F	p	Dif.
Between Groups	42,204	2	21,102	3,054	,054	-
Within Groups	483,687	70	6,910			
Total	525,890	72				

The one way variance analysis data listed in Table 3 show that there is not a significant difference regarding to the pretest results of the groups $[F_{(2-72)}=3.054, p>0.05]$ .However a careful examination of the data revealed that the difference was at the limit of the significance level. That was why the difference between the groups has been investigated by the use of the LSD test. The LSD test results showed that there was a significant difference between the pretest results control and the experimental group I. where the blended learning method was applied. This shows that the academic achievement of the groups in geography course before the experiment were not equal and the students in the experimental groups I and II have higher academic achievement scores compared to the control group. Table 4 presents the pretest attitude points of the experimental and the control groups.

Table 4: The pretest attitude results of the groups

Groups	N	Liking		Interest		Choosing it as an occupation		Total	
		$\overline{X}$	**sd**	$\overline{X}$	**sd**	$\overline{X}$	**sd**	$\overline{X}$	**sd**
I. Expt. Group (Blended Learning)	26	80,07	18,34	69,81	16,15	42,61	18,42	70,16	14,32
II Expt. Group (Virtual Classroom)	26	85,34	16,51	67,20	18,57	45,65	20,86	72,23	15,12
Control Group	21	75,23	12,01	59,71	20,21	39,38	22,01	63,57	13,02

Table 4 shows that pretest attitude pretest results of the experimental group I which was subjected to the blended learning process, the experimental group II which was subjected to the virtual classroom application and the control group which was taught with face to face traditional method were $\overline{X}$ = 70.16, $\overline{X}$ = 72.23 and $\overline{X}$ =63,57 respectively . Although not very significant the results were observed to be different from each other. When we look at the results at the factors point of view we see that the highest mean value of the "liking" factor was observed in the experimental group II with $\overline{X}$ = 85.34 , the highest mean values of the "interest" and the "choosing it as an occupation" factors were observed for experimental group I and experimental group II with $\overline{X}$ = 69.81 and $\overline{X}$ = 45.65.

When we look at the mean values we can conveniently claim that the attitudes of the students towards the geography are high. When we look at the factors we see that the students developed high level of liking, medium level of interest towards the geography and have a low desire to choose it as an occupation .In order to determine whether the difference in the pretest results listed in table 2 are significant or not the pretests results were subjected to one way variance analysis and the results are tabulated in table 5.

Table 5: The Variance Analysis of the total Pretest points

Factors	Source of Variance	Sum of Squares	Df	Mean Square	F	p	Dif.
Liking	Between Groups	1196,432	2	598,216	2,312	,107	
	Within Groups	18113,540	70	258,765			-
	Total	19309,973	72				
Interest	Between Groups	1242,551	2	621,275	1,866	,163	
	Within Groups	22978,324	69	333,019			-
	Total	24220,875	71				
Choosing it as an occupation	Between Groups	458,050	2	229,025	,552	,578	
	Within Groups	29062,991	70	415,186			-
	Total	29521,041	72				
Total	Between Groups	932,003	2	466,002	2,291	,109	
	Within Groups	14240,874	70	203,441			-
	Total	15172,877	72				

The one way variance analysis results listed in Table 5 show that there was not a statistically significant differences between the pretest total points of the groups [$F_{(2-72)}$=2.291, p>0.05]. Similarly there observed no statistically significant difference between the factor of "*liking*"[$F_{(2-72)}$=2.312, p>0.05], "*interest*" [$F_{(2-72)}$=1.866, p>0.05] and "*choosing it as prospective career* " [$F_{(2-72)}$=0.552, p>0.05] among the respective groups . This can be evaluated as the groups have similar attitudes towards the geography course.

The data related to the academic achievements

Since there was a significant difference between three groups regarding to pretest points there needed a covariance analysis for the evaluation of the posttest data. The assumption to be satisfied for the use of variance analysis were tested and the post test data based on the pretest results showed that the slopes of the regression lines were equal and the variance of the academic achievement posttest points was homogenous. Table 6 lists the academic achievement posttest mean points corrected according to the pretest data.

Table 6: The Academic Posttest Mean Points Corrected According To the Pretest

Groups	N	Mean	Corrected Mean
I. Expt. Group (Blended Learning)	26	18,83	18,57
II Expt. Group (Virtual Classroom)	26	17,11	17,21
Control Group	21	14,42	14,60

According to Table 6' the academic achievement posttest mean points were found to be $\overline{X}$ =18.83 for the experimental group I, $\overline{X}$ =17. 11 for the experimental group II and $\overline{X}$ =14.42 for the control group. There was a difference between the control group and both the experimental group as regard to the academic achievement posttest mean values. However these are the raw values and they must be corrected according to pretest results. The corrected points were calculated as $\overline{X}$ =18.57 for experimental group I, $\overline{X}$ =17.21 for the experimental group II and $\overline{X}$ =14.60 for the control group. The covariance analysis determine whether these difference observed between the mean values are significant or not and the results are listed in table 7 .

Table 7. Co variance analysis of the academic achievement posttest results corrected according to pretest data

Source of Variance	Sum of Squares	Df	Mean Square	F	p	Dif.	ŋ2
Model	249,305	3	83,102	7,580	0,00		0,248
Oretest (Reg.)	25.360	1	25,3060	2.313	0.13		0,032
Group (Main Ef.)	**175,878**	**2**	**87,939**	**8,021**	**,001**	Var	**0,189**
Error	756,475	69	10,963				
Total	21967,000	73					

Covariance Analysis results showed that there was a significant difference between the posttest academic achievement mean values of the students corrected according to the pretest data [$F_{(2-69)}$=8.021, p<0.001]. If we take the corrected posttest academic achievement results of the experimental group I which were subjected to the blended learning ($\overline{X}$ =18.57) , the experimental group II which were taught with virtual classroom practice ($\overline{X}$ =17,21) and the control group which only received the face to face learning ($\overline{X}$ =14.60) there is not a significant difference regarding to the corrected posttest points in the academic achievements between the experimental group I and II. However there is a significant difference between the control group and the both experimental groups in favor of the latter. When we take the psi square values the operational groups the points are seen to be independently explain the %18.9 of the difference in posttest values.

This can be interpreted as both the blended learning and virtual classroom applications provided significant contribution the academic achievements of the students in geography

than the face to face learning. Although the corrected posttest mean value of the academic achievement of the experimental group I which was subjected to the blended learning is a little bit higher than the experimental group II which were taught with the virtual classroom application the difference between them is not significant.

The results of attitudes towards the geography course

If there was a significant difference between the pretest data between the related groups the posttest results needs Covariance Analysis. The assumption to be satisfied for the use of variance analysis were tested and it was found that the slopes of the regression lines were equal and the variance of the attitude towards the geography course posttest points was homogenous .The total attitude posttest mean points corrected according to the pretest data were tabulated in table 8.

Table 8: The total attitude posttest mean points corrected according to the pretest data

Groups	**N**	**Mean**	**Corrected Mean**
I. Expt. Group (Blended Learning)	26	61,27	61,23
II Expt. Group (Virtual Classroom)	26	70,26	70,17
Control Group	21	65,86	66,04

According to table 8 the posttest mean attitude points of the experimental group I , experimental group II and the control group were found to be $\overline{X}$=61.27, $\overline{X}$=70.26 and $\overline{X}$ =65.86 respectively. The mean attitude point for the experimental group I was observed to be a little bit higher. However the values are to be corrected according to the pretest data. The corrected values were computed as $\overline{X}$=61.23, $\overline{X}$=70,17 and $\overline{X}$=66,04 for the experimental group I, experimental group II and the control group respectively. The result of the Covariance Analysis carried out to determine whether the difference between corrected posttest data was significant or not are given in table 9.

Table 9: The Covariance Analysis of the attitude Posttest mean values corrected according to pretest data

Source of Variance	Sum of Squares	Df	Mean Square	F	p	Dif.	ŋ2
Model	1068,118	3	356,039	1,074	,366		,045
Oretest (Reg.)	15,002	1	15,002	,045	,832		,001
Group (Main Ef.)	**1037,497**	**2**	**518,749**	**1,565**	**,216**	YOK	**,043**
Error	22875,800	69	331,533				
Total	339955,000	73					

The Covariance Analysis results listed in table 9 reveals that there was not a significant difference between the total attitude posttest results corrected according the pretest data. [$F_{(2-69)}$ =1.565, p>0.05]. This shows that the blended learning and virtual classroom application do not make a significant contribution to the attitude of the students toward geography course compared to the traditional face to face method. This situation can be attributed to the fact that the students already had high attitude points at the beginning of the study.

Conclusion and Discussion

The results of this study are the following:

1. The attitudes of the students towards the geography course was found to be high at the beginning of the study. Regarding the factor analysis the students the students had sufficient

liking levels towards the course. However they have medium level interest to it and low level willingness to choose it as their prospective jobs. In other words the students like geography as a course but reluctant to choose it as their respective carrier.

2.Both the blended learning system and virtual classroom applications were found to make a significant contribution to the academic achievements of the students compared to the face to face learning .Although the corrected posttest academic achievement score of the experimental group I which were subjected to the blended learning process was a little bit higher than that of the experimental group II who were taught with the virtual classroom application the difference can easily be neglected .

The fact that the academic achievement score of the students who were subjected to blended learning process was similar to that of the students who were taught with imagery classroom application can be attributed to the use of the same web site and the effectiveness of teacher – student and student-student interactions were as good as they are in face to face learning It is reported in the literature that the blended learning are much more effective than the traditional approaches Usta (2007), in his paper, where he studied the effect of the blended learning and the face to face education upon the academic achievements and students satisfaction, found that the merge learning were much more effective than the face to face traditional education. They also concluded that the learning process as result of the blended learning process was much more permanent. The students who were subjected to blended learning process were found to establish much better teacher-student interaction and obtain much bigger satisfaction as regards to teacher support, course content, course target and perceived institutional support than the ones who received face to face learning . In a study carried out by Eşgi (2005) the first group of students were only given access to a related web site, the second group of students were given access to web site together with the written documents and the third group students in addition of being allowed to the access to web site and given the written documents they were also provided the face to face learningal support. Among all these three groups the most successful one was the third group which was given all the opportunities.

However there are studies in the literature where there was no difference observed between the academic achievement scores of the students who were given blended learning and the face to face traditional approach. Ünsal (2007) in his study where he evaluated the blended learning process upon 22 student control and 24 student experimental groups who took the "Introduction To The Computer Science II" course found that there was not a significant deference in academic achievement scores of the students who were subjected to the blended learning process compared to the ones who received face to face traditional education. It was concluded that the learning process was much more permanent with the blended learning compared to face to face traditional approach. Demirer (2009) created a blended learning medium by combining web based multiple learning process with the face to face traditional approach with the students who were taking the "multiple media design and production course" . The study was carried out on 44 students. The study yielded no significant difference in academic achievement scores of the students who were subjected the blended learning and face to face tradition method. Ersoy (2003) observed that the academic achievements scores and participation ratio of the students were low due to the fact that opportunities of the face to face learning were much appealing to them and they refrained from the use of web based communication.

3. Neither the blended learning practice nor the virtual classroom approach made a significant contribution to the attitudes of the students towards the geography course compared to face to face learning. This was attributed to the fact that the attitude points of the

students were already high at the beginning of the study.

The number of studies investigating the effect of the blended learning approach on the attitudes towards the course it has been applied are very limited. Some of these show that e-learning and blended learning methods had no effect upon attitudes of the students towards the course. Yapıcı (2011) reported that the blended learning and face to face learning approaches caused no meaningful difference on the attitudes of the students towards biology course. Arıkan (2007) stated that web supported effective learning process had no effect upon the attitudes of the students towards the web nets and communication course. Delialioğlu (2004) could not find any difference between the satisfaction and the attitudes of the students who were subjected blended learning process and face to face learning method. There are also studies in the literature which report that there was a significant difference between the blended learning process and the face to face approach regarding the attitudes towards course. For instance Sarısepetçi (2012) reported a significant difference between the attitudes towards the social sciences of the students who were subjected to a blended learning and the ones who received face to face learning.

Recommendation

The Proposals Related To Application

(1) It is recommended that the blended learning approaches should be used in place of traditional face to face learning in order to establish a more permanent learning process. It is important to make the full utilization of the advantages of both the web supported and face to face learning.
(2) It is also recommended to establish out class activities to provide an access to web sites and have the students using these sources repeatedly in order to promote the face to face learning in the classroom**.**

The Proposals Related To Research

(1) It is necessary to repeat these studies on other courses.
(2) The study should be enlarged including different factors.
(3) The biggest problem which the students have is the limited access to the web sites. It is necessary to ameliorate the internet web sites for the future studies and enable to students to make the best use of them after the classroom hours.
(4) The studies should be extended to a much wider time span in order to obtain much healthier data.
(5) In this study there were no attempts made for on line monitoring of the attendance of the students and the period they stayed in the net. This must be included in future studies.

Acknowledgement

This study was conducted by the first author of the second author's management of " The effects of virtual classroom practice and blended learning environments on geography course achievement and the attitudes towards the course and students' views" of the doctoral thesis produced.

References

Akkoyunlu, B. and Yilmaz Soylu, M. (2006). A Study on Students' Views on Blended Learning Environment. Turkish Online Journal of Distance Education, Vol. 7(3), 43-56.

Altunışık, R., Coşkun, R., Bayraktaroğlu, S. and Yıldırım, E. (2005). Sosyal bilimlerde araştırma yöntemleri[Research Methods in Social Science] . Sakarya: Sakarya Kitabevi.

Avşar, İ. İ. (2011). Moodle ile Temel Bilgi Teknolojileri Dersinin Uygulama Süreci [Basic Information Technology Course Implementation with Moddle], Akademik Bilişim'11 - XIII. Akademik Bilişim Konferansı Bildirileri 2 - 4 Şubat, İnönü Üniversitesi, Malatya

Aytaç, Tufan (2006). Eğitimde Bilişim Teknolojileri [Information Technology in Education] , Ankara: Asil Yayın Dağıtım.

Balcı, M. (2008). Students' Opinions on Blended Learning. Unpublished Master's Thesis, Hacettepe University, Institute of Science, Ankara

Budak, Y. and Çoban Budak, E. (2012). The Effects of Simulation Based Applications on Blended Learning. Online Academic Journal of Information Technology, Cilt/Vol: 3 (6), 47-65.

Caner, M. (2009). Blended Learning Model for Teaching Practice Course in Pre-Service English Language Teacher Training Program. Unpublished Doctoral Dissertation. Anadolu Unıversıty Instıtute of Educatıonal Scıences, Eskişehir.

Clark, R. C. and Kwinn, A. (2007). The new virtual classroom: Evidence-based guidelines for synchronous learning. San Francisco: Jossey-Bass

Dikmenli, Y. (2013). The Effects Of Virtual Classroom Practice and Blended Learning Environments on Geography Course Achievement and The Attitudes Towards The Course and Students' Views, Unpublished Doctoral Dissertation, Gazi University Institute of Educational Sciences, Ankara.

Ebbers, M., Balague, D., Ganguly, B., Noyes, D. and Salm, P. (2003). Using Ibm lotus virtual classroom: A best practices guide to E-learning. IBM Redbooks, Internetional Technical Support Organization.

Horton, W. (2000). Designing web based training. NY, Chichester, Weinheim, Brisbane, Singapore, Toronto: John Wiley.

Kaya, S. (2011). Identifying The Educational Needs Of Instructors Commissioned In The Process Of Virtual Classroom Management. Unpublished Doctoral Dissertation, Anadolu Unıversıty Instıtute of Educatıonal Sciences, Eskişehir.

Kistow, B. (2011). Blended Learning in Higher Education: A Case Study of Graduate School of Business, Trinidad and Tobago. Caribbean Teaching Scholar, 1(2), 115-128.

Orhan, F., Altun, S. and Kablan, Z. (2004). Harmanlanmış öğrenme (Blended Learning) Yöntemine Dayalı Bir Uygulama Öğrenci Görüşleri: Yıldız Teknik Üniversitesi Örneği [Students view about Blended Learning based implementation: Yildiz Technical University Sample] . IV. International Educational Technologies Conference. Sakarya.

Osguthorpe, B.R. and Graham C.R. (2003). Blended learning environments: Definitions and directions. The Quarterly Review of Distance Education, 4(3).

Şen, B., Menemencioğlu O., Atasoy F and Özcan C. (2011). Kümelenmiş Sanal sınıf Uygulaması [Clustered virtual Classroom Application], Akademik Bilişim'11 - XIII. Akademik Bilişim Konferansı Bildirileri 2 - 4 Şubat İnönü Üniversitesi, Malatya

Taslacı, N. (2007). EFL Learners' Perception of Blended Writing Class: Blog and Face To Face. Unpublished Master's Thesis. Anadolu Unıversity Institute of Educational Sciences, Eskişehir.

Uluyol, Ç. and Karadeniz, Ş. (2008). An example on blended learnıng environment: student achievement and perceptıons. Yüzüncü Yıl University Journal of Education, 1(4), 60-84.

Usta, E. (2007). The Effects of Blended Learning and Online Learning on Academic Achievement and Learner Satisfaction. Unpublished Doctoral Dissertation, Gazi University Instıtute of Educatıonal Sciences, Ankara.

Ünsal, H. (2007). Evaluation of blended learning acticity on multiple levels. Unpublished Doctoral Dissertation, Gazi University Institute of Educational Sciences, Ankara.

Yıldırım, A. and Şimşek, H. (2005). Sosyal bilimlerde nitel araştırma yöntemleri [Qualitative research methods in social sciences] . Ankara: Seçkin Yayıncılık.