Effects of Blended Learning Environment on Professional Competence and Motivation Levels of Coach Candidates

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ABSTRACT

Impeding factors which restrain educational activities such as physical impracticability exist in coach training courses, which are mainly caused by organizations, ineffective and insufficient duration of courses to resolve these problems, it is possible to use blended learning methods in coach training courses. Thus, we developed a traditional face-to-face environment for a special education course and an online environment for a fundamental education course using blending approach. The study aimed to investigate the effects of blended learning model proposed for coaching education courses on the motivation levels and professional competence of coach candidates. Participants were the trainees who wanted to participate in the first stage of the coach training course at volleyball branch. The coach candidates in the blended learning environment showed significantly higher motivation levels compared to the others in the control group. In addition, a significant difference between the control and the experiment groups of coach candidates in regard to their professional competence was detected. This study is compelling in terms of strengthening the significance of the blended learning environment, even in coach training.

INTRODUCTION

The educational system has already been affected by demographic, scientific, economic, social and political factors, and it has been extended by new functionalities and dimensions, and also it has been faced with radical changes in terms of structure, content, and method (Alkan, 1997). The common use of science and technology in educational activities as well as in other fields has become inevitable with their day-by-day progress. With the help of information technologies, there have been new types of learning groups in which students can share their knowledge, competence, and values (Rahmani & Deugherty, 2007). Educational efforts which enables active use of technology in education, and others which make education independent from time and location have been emerged. These efforts have been mostly used in primary schools, high schools, universities, and graduate schools. Vocational education or courses get behind of these commonly used technologies

and methods. There have been several deficiencies in coach training courses such as physical problems caused by organizations, transportation problems, and inflexible use of time (Demirelli, 2009). The use of technology, new learning methods and environments such as blended learning have been emerged with the increase of course demands in recent years. In general, the success of blended learning environments mentioned in the literature enables using this method in several disciplines of education. It is important to practice this approach not only in compulsory education but also in vocational education.

Coach Training Education

Nowadays, the attitude of press and media towards sports, the efforts of people to avoid stress, and to keep in form, and most importantly the international successes in sports have been quite important, hence the sports has been extended with new dimensions (Özer, 1990).

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In order to achieve goals in sports, education should be valued, and trainer staff in sports should be well-educated with adequate educational programs in scientific level (Tiryaki, 1994). The success of sportsmen at national and international levels has a parallel relation with the education that coaches give. Coaches have an important role in order for sportsmen to use and enhance their physical, mental, and social capacity (Tozoğlu, 2003). Likewise, if a coach has had an effective educational program, the sportsmen that the coach train will perform better or vice versa.

Demirelli (2009) showed that the number of courses, the duration of daily courses and the total duration of the education in the 1st stage of the assistant coach training course program required by the Coach Education Regulation are not sufficient, and they cause problems about ideal educational environment. From a different perspective, Efe (2010) investigated the curriculums of coach training, and physical education and sports teaching programs in Austria and Turkey. He concluded that the duration of physical education teaching and coaching education differs, and the courses in departments are different in two countries. He also suggested that the programs of physical education and sports teaching, and coach training in Turkey should be reviewed with respect to the policies of EU information society and the system of education.

Bowman and Dodge (2011), in their study with 14 coaches graduated successfully from Coaching Educational Program in the USA, found that students were successful and stable in their coaching careers if they were educated with the curriculums applied in an attractive and dynamic way, if they communicated with their trainers positively, and if their educational environment were enhanced. It has been found that the productivity of coach training has decreased over the years, and the applied model has not been fit in the requirements of information society.

The coach training program in Turkey has been evaluated with several studies, and it has been revealed that there have been deficiencies about legislations and practice. However, there has been no study which suggests a new model for coach training in the literature.

Blended Learning Approach

Blended learning is using multiple instructional methods in or out of the classroom in order to increase the learning productivity and to decrease the costs. This definition includes different learning methods (conference, discussion, practice, case study, simulation etc.), different teaching methods (in class or computer supported), different timing (synchronous or asynchronous), or different guidance techniques (individual, teacher supported, group study). (Pankin, Roberts & Savio, 2012; Singh & Reed, 2001).

In general, the features such as the formats of activities and practice, time and location play an important role on blended learning adapted based on the needs and requests of students and education. The flexibility of blended learning has the capability of being applied in different formats (Osguthorpe & Graham, 2003). Blended learning offers a variety of sources, open channels for accessing information and being independent of time and location, and this enhances student learning and increases the productivity of education. The capability of education being at individual speed and in control of students meets the needs of different learning styles, enables students to communicate via different tools such as forum, blog and e-mail, enables them to comprehend information in a better way, and makes information more permanent. In this way, the academic success of students, their motivation towards courses, their self-confidence and competence increase. Time and location costs decrease not only for students but also for institutions and teachers. Flexibility and suitability of blended learning enable being revised easily and designed without extra experts (Osguthorpe & Graham, 2003; Tayebinik & Puteh, 2013; Wilson & Smilanich, 2005; Dağ, 2011; Singh & Reed, 2001; Collis, 2003; Morgan, 2002; Garrison & Vaughan, 2008). In addition to these advantages, technological developments will make blended learning a more preferable learning approach by institutions in the future (Fook, Kong, Lan, Atan & Idrus, 2005).

Karadeniz and Uluyol (2009) investigated the effects of a technical course prepared in a blended learning environment on the success of 39 students

and the efficacy of learning process. They found that the success of the students are higher in blended learning environment, and also blended learning enables students to acquire useful and positive attainments. Similarly, Yıldız (2011) studied the effects of blended learning environments on the academic success in social sciences course with 71 students in the 7th grade of a secondary school by using quasi-experimental design. He concluded that the success of the students in blended learning environments are higher than the ones in face-to-face learning environments. In this perspective, Johnson (2002) stated that blended learning environment can be a motivational element and an alternative learning method in his study.

Acelajado (2011) investigated the effects of blended learning on a group of students who take an algebra course in the mathematics department, and found that the success in blended learning environments is significantly higher than the success in face-to-face learning environments. Besides, the results showed that the blended learning environment is more interesting and enjoyable for the students. Also, Sarıtepeci (2012) investigated the attendance, academic success, attitude and motivation of 107 students toward a social sciences course prepared with blended learning in the 7th grade of a secondary school. The blended learning environment and the face-to-face learning environments were compared in the study, and it has been found that blended learning enables higher academic success, and it affects the attitude toward the course positively.

In sum, the success of blended learning environments is evident in previous studies. The negative views about the efficacy of current coach training and the success of blended learning in literature and practice suggest using blended learning in coach training education.

Purpose of the Study

The main objective of this study is to develop a blended learning model using face-to-face and web-supported education for the fundamental and special education programs in scope of coach training with stages, and to identify the effects of blended learning on the professional competence and motivation of coach candidates. In accordance with this main aim, the sub-objectives presented below are investigated:

1. Is there a significant difference between the professional competence scores of the experimental group studied based on blended learning and of the control group studied based on traditional face-to-face learning approach?
2. Is there a significant difference between the motivation levels of the experimental group studied based on blended learning and of the control group studied based on traditional face-to-face learning approach?

METHOD

Context

When the coach training education is investigated, it is seen that education is given by two different institutions in Turkey. These are the higher education institutions which offer physical education or sports education, and the courses given by the Ministry of Youth and Sports with the technical support and collaboration of sports federations. Sports education in Turkey has been given under different names and by different institutions, hence problems and coordination deficiencies among these institutions have been noticed when deeply investigated. Devecioğlu, Çoban and Karakaya (2011) argue that in order to train qualified sportsmen in Turkey, coaches should be well-educated, wise and experienced. Even though several courses, institutes, academies, colleges and universities have been operating since the establishment of the Turkish Republic, the education has not been at the desired level, and qualified sportsmen have not been trained at international levels (Güçlü, 2001).

Design

In this study which investigates the effects of blended learning and traditional face-to-face learning approaches on professional competence and motivation levels of coaches, 2x2 factorial experimental design with pre-test, post-test and control group is used. In two-factored designs, there are at least two factors whose effects are investigated on the dependent variable. One of

5

these factors specifies the conditions of the experimental process that unbiased groups generate (control and experiment groups), whereas the other indicates the repeated measurements of subjects in different time intervals (pre-test and post-test) (Büyüköztürk, 2001; Hovardaoğlu, 1994).

The independent variable of this study is the educational program with two sub-levels which are the blended coach training education and the traditional face-to-face coach training education. Whilst the effects of the blended coach training education are investigated in the experiment group, the traditional face-to-face coach training education is used in the control group. The dependent variables of the study are professional competence of coaching, and motivation levels. Effects of the same dependent variable are investigated both in control and experiment groups. The groups which involves 20 trainees each, are formed with randomization.

Participants

The sample of the study was the trainees who wanted to participate the first stage of the coach training course at volleyball branch in Ankara. Two groups with 20 trainees each were formed with randomization of the total 40 trainees into control and experiment groups. When the sample of the study is selected, the maintainability of the experimental process and the accessibility of the subjects are considered.

Data Collection

Within the scope of the study, a professional competence test is developed in order to identify the professional competence levels of the trainees. Besides, in order to measure the motivational levels of the trainees, the motivation scale developed by Özerbaş (2003) for identifying the motivational effect of computer-supported anchored learning. The motivation scale consists of 30 items (15 positive, 15 negative) and its reliability coefficient is 0.88.

The objectives and behaviors that will be taught at the end of both fundamental and special education of General and Special Exercise courses are identified for the professional competence test. The test about the course is prepared with multiple choice questions in order to determine the levels of objectives and behaviors at information, comprehension, practice and analysis stages of cognitive field taxonomy developed by Bloom. KR-20 analysis is used in order to identify the reliability of the scale. According to the results of reliability and validity tests conducted at the end of the pre-test, KR-20 is found as 0.81. The low-level characterizing and negative questions are discarded from the test in order not to affect validity in a negative way. KR-20 value for the test with 40 questions is found as 0.86.

Data Analysis

Data obtained from the study is analyzed with SPSS (Statistical Package for Social Sciences), and all objectives of the study are tested at the 0.95 (p=0.95) confidence interval. Normality assumptions are controlled before conducting the statistical analyses. Parametric tests are used in the analyses with the assumption of normally distributed data. Independent-samples t-test is used for pairwise comparison of the independent variables, paired-samples t-test is used for pairwise comparison of dependent variables, and ANCOVA is used for comparing independent variables based on dependent variables.

Experimental Process

The distance education part of the model is designed based on the following steps:

- Identifying educational program and course content at the subject level
- Identifying appropriate software for the environment, and learning how to use it
- Preparing the course content with support of figures, tables, graphics and animations
- Preparing the tests and quizzes for evaluation
- Presenting the references about the topics
- Preparing the communication tools (forum, blog, e-mail)
- Preparing home works
- Announcements and news

Moodle (Modular Object Oriented Learning Environment) is used for the distance education

part of the blended learning. The main reason for preferring Moodle is that it is open sourced, free, and easy-to-use. The trainees in the control group who will be educated with blended learning method, are trained with a two-hour tutorial in order to learn how to use the platform. In this tutorial, several examples are explained to the trainees such as how to login the system, how to access lecture notes, blogs and forums, and how to participate quizzes at the end of each section, question bank and activities. In this manner, the trainees are prepared for the experiment. Distant "General Exercise" course can be accessed on "www.edersbirsunum.com" web site.

Learning Material

Coach training courses are conducted weekly in certain periods as stages. The lectures of the first stage of Coach Training Course last 94 hour in total. Fundamental education lasts 50 hours whereas Special Education lasts 44 hours. Even though there is not a general practice style, fundamental and special education lectures can be completed in 2 weeks each, so that all of the course program can be completed in 4 weeks. General Exercise is given in the fundamental education part, Special Exercise is given in the special education part of the course, and this lecture consists of several practices. When the learning environment is prepared, both General Exercise lecture (Fundamental Education) and Special Exercise lecture (Special Education) are separated in 8-hour parts. The fundamental education course is transferred to distant environment and given on web in blended learning model. The special education course is given by traditional face-to-face method. Blended learning is designed for being applied to the trainees in the experiment group (Table 1).

Table 1. Learning Methods and Techniques

Blended Learning	Traditional Face-to-face Learning
Verbalization, presentation, video etc.	Verbalization
Activity, forum, blog etc.	Question-answer
Quiz	Exercises
Exercises	Teach how to do and make trainees do
Individual study	Observation

RESULTS

In this section, the results and discussion about the data analysis related to the main objective and the sub-objectives are given.

1. Results and Discussion Related to the First Sub-objective

a. *Is there a significant difference between the pre-test professional competence scores of the experimental group studied based on blended learning and of the control group studied based on traditional face-to-face learning approach?*

The results of the independent-samples t-test related to the professional competence pre-test scores of the experiment and control group students before conducting the experiment are given in Table 2.

Table 2. Comparison of the independent-samples t-test related to the professional competence pre-test scores of the experiment and control groups

Group	N	X	S	Sd	t	p
Experiment	20	33.25	8.89	38	-0.09	0.93
Control	20	33.50	8.45			

As Table 2 indicates, the average pre-test scores of the trainees in the experiment group studied in the blended learning environment is 33.25, whereas the average pre-test scores of the trainees in control group studied in the traditional face-to-face learning environment is 33.50. It is seen that the average scores of both groups are very close to each other. The difference between the average pre-test scores of the trainees who studied based on two different learning approaches is not statistically significant [p=0.93>0.05]. According to this result, it can be inferred that the professional competence of the groups are so similar that no statistical difference has been found.

b. *Is there a significant difference between the post-test professional competence scores of the experimental group studied based on blended learning and of the control group studied based on traditional face-to-face learning approach?*

The results of the independent-samples t-test related to the professional competence post-test scores of the experiment and control group students after conducting the experiment are given in Table 3.

Table 3. Comparison of the independent-samples t-test related to the professional competence post-test scores of the experiment and control groups

Group	N	X	S	Sd	t	p
Experiment	20	72.50	9.28	38	3.85	0.00
Control	20	59.25	12.27			

As Table 3 indicates, the average post-test scores of the trainees in experiment group studied in the blended learning environment is 72.50 whereas the average post-test scores of the trainees in control group studied in the traditional face-to-face learning environment is 59.25. The average post-test scores of the trainees in the experiment group are higher than the ones in the control group. The difference between the average post-test scores of the trainees who studied based on two different learning approaches is found statistically significant [p=0.00<0.05]. According to this result, it can be inferred that the post-test professional competence scores of the trainees who studied in the blended learning environment are significantly higher.

The post-test professional competence scores are corrected based on the pre-test. The results obtained from the covariance analysis of these scores of the trainees who studied in the blended learning and the traditional face-to-face environments are presented in Table 4.

Table 4. Results from the covariance analysis of the corrected post-test professional competence scores of the experiment and control groups

Source of the Variance	Sum of Squares	Sd	Mean of Squares	F	p	R (Eta Point)
Model	3266.69	2	1633.35	20.21	0.00	0.522
Pre-test (Reg)	1511.07	1	1511.07	18.69	0.00	0.336
Group	1803.74	1	1803.74	22.32	0.00	0.376
Error	2990.17	37	80.81			
Total	179837.50	40				

Based on the results of the covariance analysis in Table 4, it can be seen that there is a significant difference between the corrected post-test professional competence scores of the groups [$F_{(1-37)}$=22.32, p<0.05].

This result can be inferred as blended learning contributes to students' learning at higher levels than traditional face-to-face learning. In other words, the professional competence of the trainees who educated in the blended learning environment increased significantly higher than the trainees who educated in the traditional face-to-face learning environment.

2. Results and Discussion Related to the Second Sub-objective

a. Is there a significant difference between the pre-test motivation levels of the experimental group studied based on blended learning and of the control group studied based on traditional face-to-face learning approach?

The results of the independent-samples t-test related to the pre-test motivation levels of the experiment and control group students before conducting the experiment are given in Table 5.

Table 5. Comparison of the independent-samples t-test related to the pre-test motivation levels of the experiment and control groups

Group	N	X	S	Sd	t	p
Experiment	20	73.40	6.57	38	-0.39	0.69
Control	20	74.30	7.96			

As Table 5 indicates, the average pre-test motivation scores of the trainees in the experiment group studied in the blended learning environment is 73.40, whereas the average pre-test scores of the

trainees in the control group studied in the traditional face-to-face learning environment is 74.30. It is seen that the average scores of both groups are very close to each other.

The difference between the average pre-test scores of the trainees who studied based on two different learning approaches is not statistically significant [p=0.69>0.05]. According to this result, it can be inferred that the motivation levels of the groups are so similar that no statistical difference has been found.

    b. *Is there a significant difference between the post-test motivation levels of the experimental group studied based on blended learning and of the control group studied based on traditional face-to-face learning approach?*

The results of the independent-samples t-test related to the motivation level post-test scores of the experiment and control group students after conducting the experiment are given in Table 6.

Table 6. Comparison of the independent-samples t-test related to the post-test motivation levels of the experiment and control groups

Group	N	X	S	Sd	t	p
Experiment	20	122.15	6.62	38	7.27	0.00
Control	20	106.45	7.02			

As Table 6 indicates, the average post-test scores of the trainees in the experiment group studied in the blended learning environment is 122.15, whereas the average post-test scores of the trainees in the control group studied in the traditional face-to-face learning environment is 106.45. The average post-test motivation scores of the trainees in the experiment group are higher than the ones in the control group. The difference between the average post-test scores of the trainees who studied based on two different learning approaches is found statistically significant [p=0.00<0.05]. According to this result, it can be inferred that the post-test motivation scores of the trainees who studied in blended learning environment are significantly higher.

The post-test motivation scores are corrected based on the pre-test. The results obtained from the covariance analysis of these scores of the trainees who studied in the blended learning and the traditional face-to-face environments are presented in Table 7.

Table 7. Results from the covariance analysis of the corrected post-test motivation scores of the experiment and control groups

Source of the Variance	Sum of Squares	Sd	Mean of Squares	F	p	R (Eta Point)
Model	2710.414	2	1355.20	32.90	0.00	0.640
Pre-test (Reg)	245.514	1	245.51	5.96	0.02	0.139
Group	2554.066	1	2554.06	62.01	0.00	0.626
Error	1523.98	37	41.18			
Total	526814.00	40				

Based on the results of the covariance analysis in Table 7, it can be seen that there is a significant difference between the corrected post-test motivation scores of the groups [$F_{(1-37)}$=62.01, p<0.05].

This result can be inferred as blended learning contributes to students' motivation toward course at higher levels than traditional face-to-face learning. In other words, the motivation level of the

trainees who educated in the blended learning environment increased significantly higher than the trainees who educated in the traditional face-to-face learning environment.

CONCLUSION AND SUGGESTIONS

The difference between the average motivation levels of the trainees who studied based on two different learning approaches is not statistically

9

significant before the experiment [p=0.69>0.05]. Similarly, the difference between the average professional competence scores of the trainees who studied based on two different learning approaches is not statistically significant before the experiment [p=0.93>0.05]. The motivation levels and the professional competence scores of two groups are so similar that no significant difference has been found between them. It can be said that the motivation and the readiness toward course are equal for the trainees both in the experiment and in the control groups.

The difference between the average post-test motivation levels of the trainees who studied based on two different learning approaches is found statistically significant [p=0.00<0.05]. The motivation of the trainees in the blended learning environment is statistically higher than the ones in the traditional face-to-face learning environment. This result is consistent with the studies of Sarıtepeci (2012), Johnson (2002) and Acelajado (2011) which were conducted by using blended learning environments. High motivation levels toward education and courses enable better and more permanent learning for students (Lee, Shen & Tsai, 2010). Hence it is important to use instructional techniques which increase the motivation and attention of students.

The difference between the average post-test professional competence scores of the trainees who studied based on two different learning approaches is found statistically significant [p=0.00<0.05]. The professional competence of the trainees in the blended learning environment is statistically higher than the ones in the traditional face-to-face learning environment. This result shows that the courses conducted in the blended learning environment are more effective on the motivation and on the professional competence than the ones conducted in the traditional face-to-face learning environment. It is consistent with the studies of Karadeniz and Uluyol (2009), Acelajado (2011), and Yıldız (2011).

In coach training field, there have been deficiencies about modern instructional practices in terms of developing technologies and recent literature. Even though the physical impracticability of courses and organizational problems are only visible problems,

they cause the efficiency of courses being questionable with respect to the sources used and instructional methods. The blended learning suggested and experienced in this study provides new research-based insights about motivation and professional competence against the problems stated.

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