

# COMPARISON STUDY BLENDED LEARNING AND CONVENTIONAL LEARNING IN IMPROVING STUDENTS' COGNITIVE IN THE FITNESS ELEMENT

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## ABSTRACT

*This study aims to find out the impact two approaches of learning, conventional learning and blended learning, on increasing and improving the cognitive level at students in mastering the elements of fitness and its importance. The quantitative experimental study was implemented to achieve the objective of this study. In this study, the study sample was randomly chosen from two schools following to the Directorate of Education in Ajloun, Jordan. Conventional learning was applied in the Ezzeldeen Osama mixed school (school B), while blended learning approach was applied in the Hadaeq Al Tofola mixed school (school A). To gather the data, the learning approaches were implemented for fourteen weeks. The cognitive pre-test and cognitive post-test of fitness elements were performed before and after implementing the both learning approaches, respectively. The study findings showed that the implementation of blended learning approach contributes in improving and increasing students' cognitive in mastering the fitness elements and knowledge of its importance in physical education course more than the conventional learning.*

**Keywords:** Jordan, Blended Learning, Conventional Learning, Physical Fitness, Fitness Elements, Knowledge, Cognitive.

## INTRODUCTION

Information and Communication Technology (ICT) is widely seen as a motor of fostering 21<sup>st</sup> century skills in nearly all education-related fields, especially schools (Kretschmann, 2015). ICT has not only become ubiquitous in today's children's and adolescents' daily lives, it has even been adopted by nearly all school subjects in the meantime at least within academic discussion and debate (Webb & Cox, 2004). School students are surely so-called "digital natives" (Prensky, 2001), being used to deal with ICT as part of their lifestyle and even expecting it to serve as a surrounding resource throughout their educational and professional career (Prensky, 2008). Moreover, with the rapid development of economy and ICT, modern ICT has been entering the field of sports. At present the international and domestic sports competition organization and management, relevant supporting athletes training, sports specific equipment research and development facilities, sports information network construction and development of sports utility software applications are indispensable (Can et al., 2011).

The value of sports is very high and it is having very much influence worldwide to bring peace and friendship with each country. Because of the value of sports publicity has increased more it has spread very much fast to all over the world. The field of Physical Education (PE) and sports can make a significant contribution to the role that technologies play in our lives by

carefully considering the benefits and liabilities of new information technologies on the whole person, body as well as mind. Nowadays in schools, colleges and other institutions, students are given more organized and disciplined education through ICT and computers, because it is more authentic innovation and convincing. A variety of programs are available which help in track-grading, conducting health assessment, monitoring research projects, and analyzing sports performances (Ramesch, 2016). In this era of globalization, Power point presentations, videos, YouTube and Animation have become much more effective and useful in teaching. However, in Jordan, the usage of ICT in education became the main issues that are raised by King Abdallah II of Jordan through establishing Jordan Education Initiative in 2003. This organization promotes the new education system by integrating ICT in education. Linking the initiative to other educational initiatives affected the idea in improving the electronic cognitive learning, and developing the current educational methods by training the teachers on using the ICT in the way to reach for the global standards. The ICT innovation has been implemented in Mathematics course, the system has also continued to other courses such as Arabic, Science, etc. (Banat, 2010).

In order to make a human live a healthy and vibrant life, the modern societies paid increasing attention to PE. Concerning the PE is also to make a human is more capable in facing the requirements and challenges of the life as well as increase self-confidence. Alsaqqa (2007) emphasized the PE and sport player seeks to achieve personal success and self-esteem by joining a sport's team and then reaching a notable place among the group, distinction and fame. Besides, Ministry of Education in Jordan focused on applying the Blended Learning (BL) in PE in school to give the students chances to enjoy the sport participation which could be as a corner stone in building and preparing the future generation. Altlafeh (2013) defined BL is the use of modern technology into teaching-learning process by blending goals, contents, resources, and methods into the Conventional Learning (CL), while CL refers to a teaching method involving instructors and the students interacting in a face-to-face manner in the classroom (Stacey, 2007). However, the PE is a process, targeting an improvement, and it perfects growth of the students at all aspects: physical, mental, and psychological in a way, which ensure a balanced character (Al-Saidi, 2015). The fitness elements included flexibility, speed, agility, strength, and endurance in the PE is the most important elements of fitness, and considered the important physical requirements of mass sports. The importance of fitness element in health at different ages is to protect human from the diseases related to lack of movement (Burke et al., 2014), to use them in the rehabilitation programs of some diseases (Sagi et al., 2014) and, to treat some psychological illnesses like depression, stress, and anxiety (Stanton & Reaburn, 2014). In addition, practicing sports and raising the fitness level increases the social adaptation processes, and shapes the socially balanced character, and it has a positive impact to the academic achievement (Joseph et al., 2014). The desire of the player in the exercise of sports in general and the elements of physical fitness in particular results in search for information and knowledge about how to apply, develop, practice these elements and benefits of them. Thus, there are different ways, in which the player can gain knowledge about how to develop, practice and apply fitness elements. Some modern technologies, as YouTube, PowerPoint, camera, computers, can assist in it (Alsaqqa, 2007).

The use of blended teaching and learning methods was generally a positive experience for students in terms of knowledge and usefulness (Ireland et al., 2009). However, from a pedagogical perspective, it is stated that knowledge has an influence on the students' levels of reflection and understanding, although the empirical evaluation of the association between

knowledge and reflection has hardly been examined. Further, similarly, hardly any studies or no studies examine or examined the influence of health-related fitness knowledge on physical activity behavior after a school-based physical activity program using a blend of teaching and learning methods. Hence, this paper outlines and reports on an experimental study to explore the role, potential impact for the use of BL in improving knowledge in the fitness elements and its importance in PE course at sixth grade students, so as to improve the students' quality and promote the cause of participation in sports activities in schools in Jordan.

## METHODOLOGY

The methodology of a quantitative research approach, which expressed as a Bloom's taxonomy, was followed to achieve the objective of this pilot study. Bloom's taxonomy was created to promote higher forms of thinking in education, such as analyzing and evaluating concepts, process, procedures, and principles, rather than just remembering facts (rote learning). In this study, the study sample consisted of 30 male and female students from BL group (Experimental group) and 30 male and female students from Conventional Learning (CL) group (Control group). The study sample was chosen randomly from the study population during the first semester of academic year 2017/2018. However, before starting the training programs, the cognitive pre-test was conducted to measure the level of both experimental and control students groups and their knowledge of the physical fitness elements, while the cognitive post-test was conducted after completion of the training program. The raw scores and other data were entered into SPSS for analysis. In addition, to analysis the hypotheses of study, the independent and pair T-Tests were conducted on mean results of cognitive pre-test and post-test.

## HYPOTHESES

*H1: BL give a positive impact in improving knowledge in the fitness elements and its importance and benefits at the sixth grade students in PE course.*

*H2: There will be statistically significant differences for using BL on the knowledge of the sixth grade students in the fitness elements for favor of the experimental group.*

## RESULTS

Table 1 shows in details the distribution and standard deviation results as well as the obtained T-test results of the knowledge pre-test and post-test of the experimental group.

Test	N	Mean	S.D.	Mean Difference (%)	T-value	P-value
Knowledge Pre-test	30	5.77	1.22	149.57	33.73	0.000
Knowledge Post-test	30	14.4	0.67			

Table 1 shows the differences results between the cognitive pre-test and post-test means of the experimental group. The obtained T-Test value is 33.73 with a significance value of 0.00. The significance value is less than 0.05, indicating a significant statistical difference between the level of cognitive in the pre-test and post-test. The statistical difference is in favor of the post-test as a better mean compared to the pre-test mean. Accordingly, the BL has a positive impact on

improving the students' knowledge. The T-test was also employed in this study to measure the impact of using CL on improving students' knowledge in physical fitness. The distribution, standard deviation and T-Test results of the knowledge pre-test and post-test of the control group are listed in Table 2.

Test	N	Mean	S.D.	Mean Difference (%)	T-value	P-value
Knowledge Pre-test	30	6.2	1.5	55.32	7.92	0.000
Knowledge Post-test	30	9.63	2.46			

Table 2 illustrates the differences results of the cognitive pre-test and post-test means for the control group. The T-test value is 7.92 and the statistical significance value is 0.000 ( $P < 0.05$ ). This means there is a significant statistical difference between the level of cognitive in the pre-test and post-test the physical fitness. The statistical difference is in favor of the post-test as a better mean achieved. Therefore, the CL has an impact on improving the students' cognitive. The T-Test difference results between the experimental group and control group in the pre and post measures of cognitive are summarized in Table 3.

Test	Group	N	Mean	S.D.	Mean Difference (%)	T-value	P-value
Knowledge Pre-test	Experimental	30	5.77	1.22	6.94	1.3	0.198
	Control	30	6.2	1.35			
Knowledge Post-test	Experimental	30	14.4	0.67	-49.53	10.25	0.000
	Control	30	9.63	2.46			

Table 3 displays the differences results between the two groups in the pre-test and post-test measures. The T-test value of the cognitive pre-test between the experimental group and control group is 1.30, while the significance value is 0.198. It is noted that the significance level value is greater than 0.05, which means there are no significant statistical differences between the two groups in the pre cognitive level in the physical fitness elements. This confirms that the two groups are equivalent, in other words, the level of cognitive at students in the physical fitness is equal before starting the training programs. Nevertheless, as presented in Table 3, the difference between the two groups in the post measure in the level of cognitive was revealed. The obtained T-test value is 10.25 with a significance value of 0.000 ( $P < 0.05$ ), indicating there is a significant statistical difference and this difference is in favor of the experimental group as it shows a better mean compared to the control group mean. Hence, the use of BL gives a positive and significant impact in improving and increasing the knowledge level of students in physical fitness.

## CONCLUSION

Information technology plays vital role in the human being in particularly in field of sports and games. It also helps to avoid mistake in organization and administration of various

sports and games. In this pilot study, the BL approach was implemented as a method of modern technological learning. Based on the findings and discussions, the following conclusions can be drawn:

1. The BL has a positive and significant role in relation to improving students' knowledge, understanding and personal performance. It has also a role in helping to develop and promote independent learning and as a motivator.
2. The results of cognitive pre-test and post-test of BL approach showed the students' knowledge level in the fitness elements and its importance significantly improved during the training program.
3. The result of paired cognitive tests of the control group showed the CL has a role and impact in improving students' cognitive in physical skills, but still far less than the BL impact.

## RECOMMENDATIONS

BL is the kind of system of learning that combines the CL and online together. The results of this study showed that BL contributed significantly and directly to increasing the level of knowledge of students. In the system of BL, students are not only passive to study in class, but also encourage and makes students to be more active in the progress of teaching and learning. Therefore, this study encourages and recommends the use of structured learning as a new approach to learning in order to provide active learning that can increase students' achievement and knowledge in all courses at all levels of schooling in Jordan. The learning approach recommended in this study improves and combines development of educational system and modern technology in accordance with recommendations of the Ministry of Education in Jordan.

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