B-LEAD MODEL APPROACH IN PHYSICAL EDUCATION TEACHING AND LEARNING

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ABSTRACT: *This study aims to introduce B-LEAD Model as a Physical Education teaching and learning model and to evaluate the validity and reliability of B-LEAD Model. B-LEAD Model is a blended learning teaching and learning model based on Teaching Games For Understanding (TGfU). B-LEAD Model is an effort towards the implementation of 21st century teaching and learning. The result shows that the validity and reliability of B-LEAD model can be adopted. In overall, B-LEAD Model is suitable and can be used as a teaching and learning material for teachers and students. This model provides an example of teaching that is geared towards the goal of Malaysia Education Blueprint 2012-2025 and also as preparation for Secondary School Standard Curriculum 2017.*

Keywords: B-LEAD Model, Blended Learning, Teaching Games for Understanding (TGfU).

1.   INTRODUCTION

Physical Education is an education-based physical activity process that focuses on the overall development of individuals which include cognitive, psychomotor and affective, [1]. Nowadays, the teaching and learning of Physical Education is still based on the teaching methods whereas the teacher as the model; the textbook and the syllabus as reference materials. Many Physical Education teachers face time constraint problems of timetable arrangement such as the movement of students to the field, students changing clothes and other chores of Physical Education teacher which include managing school teams in competing for outside championship, resulting in longer teaching and learning time of Physical Education between students and teachers [2]. This is further worsened with the lack of qualified teachers in Physical Education field in teaching Physical Education.

Therefore, to achieve effective implementation of Physical Education teaching techniques, Physical Education teachers should think of appropriate strategies so that students of all backgrounds and age levels are able to enjoy the learning process that encourages students' interest [1] in line with Information Communication Technology (ICT) –based education world.

Nowadays, the teaching and learning process has changed according to the latest technology development. Computer-aided teaching method and online method are increasingly becoming options for teachers to impart knowledge to students. Teaching and learning experience that combines face-to-face and computer-aided method opens a new chapter for teachers to create a more creative teaching experience, improve information-obtaining facilities and reduce the cost of purchasing teaching and learning materials [3].

In lesson planning, the influence of technology is developing. The development diversity in terms of learning resources, communication and lesson content delivery has been innovated through the use of technology in various aspects of teaching and learning, including the internet program and the ease of learning via communication and digital tools [4].

In contributing to good- quality Physical Education teaching and learning process, stimulation through the use of appropriate technology can help students to be more skillful in the content, knowledge and skills, to be more confident, and experience the excitement in carrying out physical activity [5].

Blended learning concept is an example of how technology is incorporated into teaching and learning process [6]. The combination of face-to-face and online learning in a varied delivery method produces an atmosphere, where students not only receive knowledge through face-to-face interaction with the teacher, but also can explore their own knowledge through virtual methods [7]. The study by Walsh found that students are able to learn at the highest level when ICT is used as a source in education in addition of helping teachers to conduct the teaching process indirectly [8].

Blended learning is a shift from teacher-centered learning to student-centered learning in order to make students more active and interactive [9].

Physical Education teaching approaches should be diversified by maximizing the existing infrastructures including ICT facilities. Thus, the approach of using B-LEAD Model should be brought into the teaching and learning of Physical Education in line with the National Education Blueprint 2013-2025.

The seventh shift in Malaysia Education Blueprint 2013 - 2025, that is leverage ICT to scale up the quality learning across Malaysia by providing Internet access and virtual learning environment, augmenting online content to share best practices and maximizing use of ICT for distance and self-paced learning [10]. Correspondingly, the Ministry of Education (MOE) has partnered with 1BestariNet to introduce Frog Virtual Learning Environment or Frog VLE which began in March 2012 and is still being implemented in stages.

2.   EXPERIMENTAL DETILES

This research is intended to identify the effectiveness of B-LEAD Model in teaching and learning of handball game approach based on Teaching Games for Understanding (TGfU) in Physical Education. This model is called the B-LEAD Model (B) blended- (L) learning, (E) encourage, (A) assessment, (D) distinguish (B-LEAD). B-LEAD Model is a combination of face-to-face and online teaching and learning methods with handball game content based on Level 2Physical Education syllabus, Malaysia Integrated Secondary School Curriculum.

 The objectives of the study are as follows:

i.   To identify the effectiveness of B-LEAD Model in teaching and learning of handball game approach based on TGfU in Physical Education.

The research questions are as follows:

i.   What is the formative achievement level of students in handball game based on TGfU for online approach using Frog VLE site?

ii.   What is the formative achievement level of students in handball game based on TGfU for face-to-face approach?

iii.   What is the summative achievement level of students in handball game based on TGfU?

iv.   Is there a difference between online approach using Frog VLE site and face-to-face approach?

v.   To what extent is the relationship between formative and summative achievement of students in handball game based on TGfU?

vi.   What is the teacher's approval level of B-LEAD Model?

The conceptual framework B-LEAD Model approach In teaching and learning of Physical Education is shown as below.
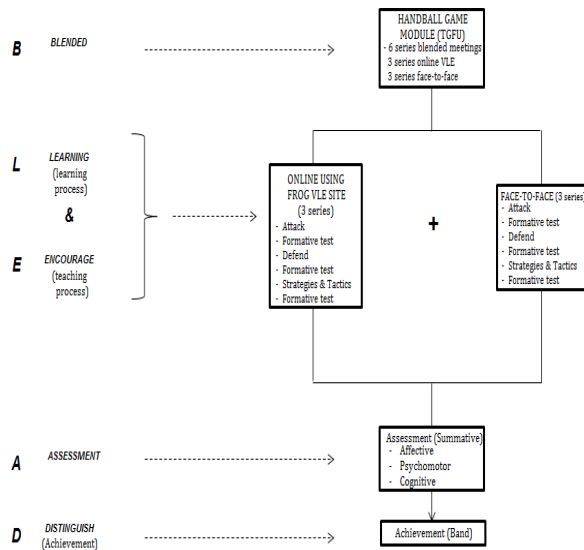

Figure 1. The Conceptual Framework B-LEAD Model Approach In Teaching and Learning of Physical Education.

The design of the study is using pre experiment one shot case study. The samples consisted of 31 students aged between 13 to 14 years and involved 3 expert panels. The selection of samples for this study is by purposive sampling.

B-LEAD Model is built according to handball game content based on Level 2 Physical Education syllabus, Integrated Secondary School Curriculum. The teaching and learning method of B-LEAD Model is based on Teaching Games for Understanding (TGfU) method by Bunker and Thorpe, 1982.

In the construction of the module, Bunker and Thorpe (1982)Model [11], Constructivism Theory , DDD-E Model-Decide, Design, Develop, Evaluate [12], and ASSURE Model [13] are adopted as illustrated in Figure 2, Figure 3 and Figure 4.
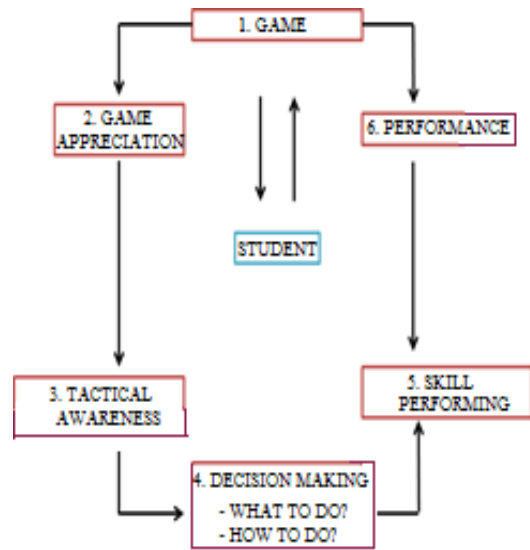

Figure 2 Teaching Games for Understanding Model (Bunker and Thorpe, 1982)

TGfU model used as shown in Figure 2 is the basis of B-LEAD Model, either face to face or on-line. With the TGfU teaching and learning approach that emphasizes the students to think, solve problems and game tactics, constructivist theory is used as a guide to build B-LEAD.

DDD-E model shown in Figure 3 below is suitable to be used to design, develop and evaluate multimedia materials in education field. This model approach has been identified as capable of providing a systematic and reliable methodology in developing an instructional design based on multimedia. It is able to be adapted with technology-based education [12].
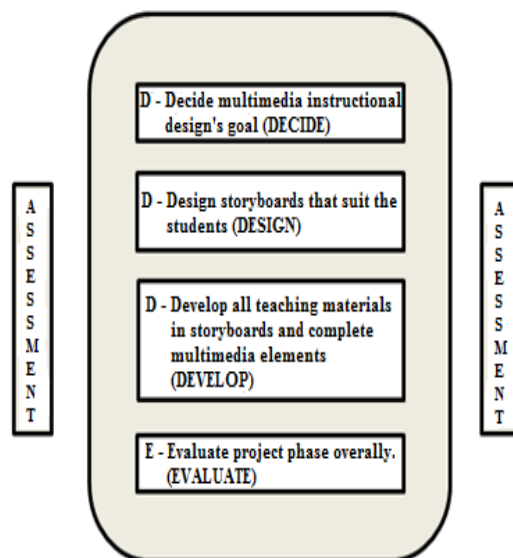

Figure 3 DDD-E Model (Ivers dan Barron, 1998)

ASSURE model (Figure 4) is a systematic instructional design approach in developing media and technology- aided learning process [13]. ASSURE model focuses to emphasize teaching students with various learning styles, which the students are required to interact among themselves and not receive information passively so that the teaching and learning process using B-LEAD Model can be implemented smoothly and effectively. The construction of B-LEAD Model uses ASSURE model as reference as it involves teaching and learning which is media and technology- aided. ASSURE model is helpful in planning the program contained in the module because various types of multimedia methods can be used.
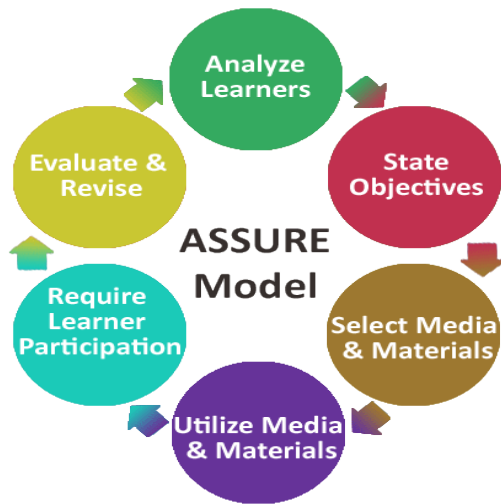

Figure 4 ASSURE Model (Smaldino, Lowther & Russel, 2002)

There are several steps taken by the researchers in the process of framing the module to ensure that the instruments built are of good quality. The steps are as follows:

Step 1

Evaluate the teaching and learning materials based on Form 2 Physical Education Syllabus and also TGfU method for handball game in line with the requirements of the syllabus as it has been adopted in the Primary School Standard Curriculum.

Step 2

Design the materials of the teaching and learning module, either in terms of content, online or face to face instructional.

Step 3

The completely built module is referred to three expert panels who involve content evaluation aspects, language evaluation and instructional design evaluation. Suggestions and comments from the expert panels are used for to revise and improve the module.

Step 4

A pilot study is conducted on the selected students of 13 to 14 years (N = 31). Pilot study is conducted to identify the reliability of the instruments used in the module. There are several amendments and improvements made based on the pilot study.

Step 5

Modules and instruments built completely are briefed to the teachers who run the teaching and learning process using the module. Next, the modules are used on 31 students aged 13 to 14 years in 40 minutes of teaching and learning period.

Step 6

After the validity and reliability of the B-LEAD Model are obtained, the module can be used as a teaching and learning materials by Physical Education teachers.

B-LEAD Model contains a combination of online teaching and learning and face –to-face teaching and learning. B-LEAD Model contains 6 series in which the teaching and learning involves three series of online teaching and learning and 3 series of face-to-face teaching and learning.

In online teaching method, the teacher used Frog VLE site that was implemented by the government by using the module in B-LEAD Model which contains three aspects, namely the attack, defend and strategies and tactics. For face-to-face teaching method, the teacher carried out teaching lessons as usual in daily learning sessions by using the module in B-LEAD Model which contains three aspects, namely the attack, defend and strategies and tactics. The combination and mixing of the two teaching and learning methods, online and face-to-face completes the blended learning teaching methods based on B-LEAD Model.

The formative assessment element is created after the finishing of online and face-to-face teaching and learning for every aspect while summative assessment is carried out after the completion of the teaching and learning process that involves three aspects. The assessment process includes cognitive, psychomotor and affective aspects. Based on the results of assessments carried out, the students' level of performance will be identified through Band set, from the lowest Band 1 to the highest Band 6.

Before the implementation of module in B-LEAD Model in this study, the module's content validity and instrument's reliability are examined to study the validity and reliability of the module. The module content validity is $r = .89$ (n = 3) and reliability of the instrument is cognitive ($r = .94$, $p = 0.32$), psychomotor ($r = .88$, SD = 9.20) and affective ($r = .78$, SD = 4.64).

3.   RESULTS AND DISCUSSION

Table 1. The Student Achievement Level In The Handball Game Based On Tgfu

Aspect	Mean	SD	LEVEL
ONLINE FORMATIVE			
Cognitive	81.7	12.7	High
Psychomotor	63.1	8.11	Moderate
Affective	73.9	14.9	Moderate
FACE-TO-FACE FORMATIVE			
Cognitive	77.9	15.3	Moderate
Psychomotor	58.4	11.7	Moderate
Affective	70.6	13.3	Moderate
SUMMATIVE			
Cognitive	54.5	13.2	Moderate
Psychomotor	51.7	13.5	Moderate
Affective	76.2	10.2	Moderate

The results for a sample of 31 people for the online approach formative achievement show that cognitive aspect's achievement is higher than the psychomotor and affective aspects'. The results of this study are in line with the study done by Walsh, [8] over 16 students of which 15 of them managed to get the rank of 'excellent' and 'very good'. This shows that students are able to learn through online learning.

In addition, the study of a sample of 31 people for the face-to-face formative achievement shows that the cognitive aspect's achievement is higher than the psychomotor and affective aspects', but is at a moderate level. This gives an indication that face-to-face approach is also giving impact on student achievement levels, although at a moderate level. Study showed that the interaction between students with students and students with teachers during face-to-face teaching and learning is necessary for students [13]. This indicates that face-to-face teaching and learning also plays a role in the teaching and learning process.

The summative achievement level for a sample of 31 people that performed the summative achievement shows that the affective aspect's achievement is higher than the psychomotor and cognitive aspects' but is at a moderate level. Through the results of this study, the overall summative achievement for online and face-to-face teaching and learning is at a moderate level. Research has proved that online and face–to-face teaching and learning are the factors of students' success and can improve their achievement levels [14].

For the samples of this study, the same samples are tested for online and face-to-face approaches (n = 31), online approach (M = 72.97, SD = 7.87, n = 31) shows higher achievement than face-to-face approach (M = 68.93, SD = 9.83, n = 31) but does not show a significant difference, t (31) = -2.43, p = .022. The results of this study indicate that the teaching and learning of Physical Education can be done through blended learning, that is online and face-to-face teaching and learning. The study found that students show interest in learning when the learning process is done online and face-to-face [15].

For the sample of this study (n = 31), the correlation strength between formative achievement (M = 71.3, SD = 7.61) and summative achievement (M = 60.8, SD = 7.2) is low, r = -.043, p = .819. Although the correlation strength between the formative achievement and summative achievement is low, the diversity of activities in online and face-to-face teaching and learning makes the learning process very effective in addition to the comfortable learning environment that encourages interaction between teacher and students [16].

The result of 2 sample teachers for the approval of B-LEAD Model shows a high level of approval of B-LEAD Model use in teaching and learning (M = 88.4, SD = 3.96). This illustrates that teachers agreed that blended learning approach of teaching and learning of Physical Education can benefit in terms of the effectiveness of student achievement, delivery method satisfaction and become the best option to improve the satisfaction of students in learning and teachers in teaching [17].

4.   CONCLUSIONS
In overall, B-LEAD Model is suitable and can be used as a teaching and learning material for teachers and students for Physical Education subject. The online teaching and learning

approach in B-LEAD Model makes effective teaching and learning in improving students' achievement apart from face-to-face teaching and learning. B-LEAD Model is able to provide Physical Education teachers with teaching examples geared towards the goal of Malaysia Education Blueprint 2012-2025, realize the 21st century learning system and also prepare for the implementation of Secondary School Standard Curriculum in 2017.

5.   REFERANCE
[1] Kamaruzaman, S. A. S., & Shabeshan, R. Strategi dan perancangan dalam pengajaran pendidikan jasmani di sekolah menengah. In S. N. Akmar (Ed.), *Amalan dalam Pendidikan Jasmani di Malaysia* (p. 2). Kuala Lumpur: Pearson. (2012).

[2] Farahiza, Z. A. Blended learning in higher education institution in Malaysia. In *Proceedings of Regional Conference on Knowledge Integration in ICT 2010* (pp. 454–466). Malaysia. (2010).

[3] Graham, C. R. The Chronicle of Higher Education. In C. R. Bonk, C. J. & Graham (Ed.), *Handbook of Blended Learning: Global Perspectives, Local Designs.* San Francisco: Pfeiffer Publishing. (2004).

[4] Gibbone, A., Rukavina, P., & Silverman, S. Technology Integration in Secondary Physical Education: Teachers' Attitudes and Practice. *Journal of Educational Technology*, *3,* 27–42. Retrieved from http://www.sicet.org/journals/jetde/jetde10/3-Anne.pdf. (2010).

[5] National Association Sport and Physical Education (NASPE), *Appropriate Use of Instructional Technology in Physical Education* Appropriate Use of Instructional Technology in PE (cont.) (2009)

[6] Kaur, M. Blended Learning - Its Challenges and Future. *Procedia - Social and Behavioral Sciences*, *93*, 612–617. http://doi.org/10.1016/j.sbspro.2013.09.248. (2012).

[7] George, W., L., D., & Keeffe, M. Self Determined Blended Learning: A Case Study of Blended Learning Design. *Higher Education Research & Development.* http://doi.org/10.1080/07294360903277380. (2010).

[8]Walsh, M. Boys and Blended Learning: Achievement and Online Participation in Physical Education. *Nihon Ronen Igakkai Zasshi. Japanese Journal of Geriatrics.* University of Canterbury. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/247475510. (2013)

[9]Yusuf, M. T. Mengenal Blended Learning. *Lantera Pendidikan,* *14*(2). 232-242. (2011).

[10]Kementerian Pendidikan Malaysia. *Pelan Pembangunan Pendidikan Malaysia 2013-2025 (Pendidikan Prasekolah hingga Lepas Menengah)*. Malaysia. (2013).

[11]Bunker, B., & Thorpe, R. A Model for the Teaching of Games in Secondary Schools. *Bulletin of Physical Education*, *18*(1), 7–10. (1982).

[12] Karen, S. I., & Ann, E. B. *Multimedia Projects In Education Designing, Producing and Assessing.* Colorado: Libraries Unlimited.(1998).

[13]Akkoyunlu, B., & Soylu, M. Y. A Study of Student ' s Perceptions in a Blended Learning Environment Based

on Different Learning Styles What is Blended Learning ? What is Learning Styles ? *Educational Technology & Society*, **11**(1), 183–193. (2008).

[14]Bawaneh, S. S. The Effects of Blended Learning Approach on Students ' Performance : Evidence from a Computerized Accounting Course. *International Journal of Humanities and Social Science*, **1**(6), 63–69. (2011).

[15]Heinich, R., Molenda, M., Russell, J., & Smaldino, S. The ASSURE Model. In *Instructional Media and Technologies for Learning* (**Vol. Seventh**). (2002).

[16]Wang, H. C., & Chiu, Y. F. Assessing e-learning 2.0 System Success. *Computers & Education*. http://doi.org/10.1016/j.compedu.2011.03.009. (2011).

[17]Keshta, A. S., & Harb, I. I. The Effectiveness of a Blended Learning Program on Developing Palestinian Tenth Graders' English Writing Skills. *Education Journal,* **2(6),** 208. http://doi.org/10.11648/j.edu.20130206.12. (2013).

[18]Vernadakis, N., Giannousi, M., Tsitkari, E., Antoniou, P., & Kioumourtzoglou, E. A Comparison of Student Satisfaction Between Traditional and Blended Technology Course Offering in Physical Education. *Turkish Online Journal of Distance Education,* **13(1),** 137-147. (2012)