

## **Technology Innovation and Learning Media in Industrial Revolution Era 4.0 (Blended Learning) in Physical Education**

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### **ABSTRACT**

Innovation in educational field is carried out to solve educational problems and prepare all aspects of education to try to deal with the development of technological disruption. Educational innovations are carried out to solve educational problems and prepare all aspects of education to try to deal with the development of technological disruption. Educators and students in the digital age, can easily access information about physical literacy, as manifested in physical education. Blended learning as learning centered on the development of educational technology by combining face-to-face (face to face), offline and online as well as helping the process of accelerating education, one of which is by implementing flip classroom. The main purpose of physical education learning based on blended learning seeks to improve movement skills and physical activities for students. The research uses descriptive survey method, starting from identifying the needs, designing the system to be made and implementing a learning system based on blended learning. Data collected through questionnaires and structured interviews. The findings show an increase, first 90% of students become more focused, disciplined, innovative, creative, and interactive in physical education learning. Second, 85% of students are able to implement student center learning and 4C in physical education learning. Third, 87% of students learn to use ICT-based teaching materials (e-learning in the form of LMS) and digital learning resources (videos and e-books) in creating cognitive, psychomotor and character development.

**Keywords:** Technology Innovation, Industrial Revolution Era 4.0, Physical Education

### **INTRODUCTION**

Physical education is part of education that prioritizes physical activity and the promotion of healthy living for physical, mental, social, emotional, and character growth and development. Physical education has been situated as the primary vehicle for children and adolescents to develop physical literacy. The intended purpose of physical education is to develop students' appropriate skills, help them understand strategies for moving within a specific environment, and to understand how this affects their health, rather than simply providing students with an opportunity to become physically fit within lessons. Physical literacy as a multidimensional disposition acquired by individuals encompassing "the motivation, confidence, physical competence, knowledge and understanding to maintain physical activity throughout the lifecourse (Sum, K. W. R, Wallhead, T., Ha, S. C. A. and Sit, H. P. C., 2018).

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 (Al Qudah, Rashid, Iffah and Al Ani 2018). The utilization of Internet-based technologies in education has been growing at a rapid rate. We report on research which examined teachers' views of the implementation of a programme involving both face-to-face and online contact between pupils. Recent times have seen a rapid growth in demand for online access and provision of learning resources online. Higher education has been actively encouraged to find more effective and flexible delivery models to provide all students with access to quality learning experiences yet also meet institutional imperatives for efficiency and accountability (Alruwai, M. E., 2015).

E-learning and the role of technology in workplace learning have been high-profile topics in academic and practitioner HRD publications for some years (Margaryan, A., Collis, B., & Cooke, A., 2004). In practice, e-learning has frequently been implemented by retaining a focus on the delivery of existing content, albeit in flexible multimedia packaging. Discuss with it, blended learning is one of the most important pedagogical formats that can enhance student learning, optimize the use of active learning

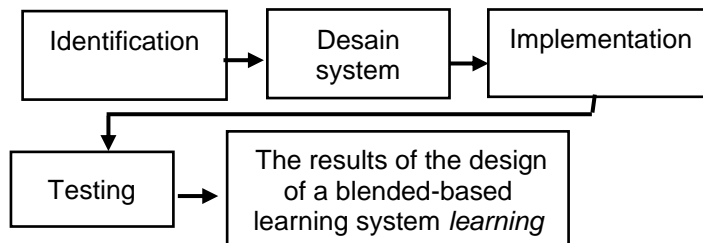
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strategies, and potentially improve student learning outcomes (De George-Walker, L., and Keeffe, M., 2010). Blended learning (BL) is learning that is facilitated by the effective combination of different modes of delivery, models of teaching and styles of learning (Tsai, C.W., Shen, P. Di, & Tsai, M.C., 2011). Blended learning method with one of the learning components using interactive media, this as a solution to adjust learning styles at the moment. Blended learning aims to build a balance between online learning and face-to-face learning (Purvis, A.J., Aspden, L.J., Bannister, P.W. & Helm, P.A., 2011). The existence of offline and online learning in blended learning can help facilitate the delivery of aspects of knowledge to students and can help students in understanding the learning process of motion. Mirriahi, N., Alonzo, D., McIntyre, S., Kilgyte, G. and Fox, B (2015) Constructivistic learning theory allows students to build knowledge and learning skills in blended learning through their actual experiences in a professional manner. Therefore, blended learning can be considered an advantageous instructional model because it can be designed in a manner that can encourage students to become actively engaged in the instructional process. Blended learning is the seamless amalgamation of carefully selected online modules with face-to-face instruction (Austin, R., Rickard, A. & Reilly, Jacqueline, 2017). In this sense, physical education teachers have a critical role in developing student physical literacy such that future generations have the “motivation, confidence, physical competence, knowledge, and understanding to value and take responsibility for maintaining purposeful physical pursuits and activities throughout the life course.

**RESEARCH METHOD**

The method used in this research is research using descriptive survey methods, starting from identifying the needs, designing the system to be created and implementing a learning system based on blended learning. Research activities carried out by the following steps. First, conducting a needs analysis to identify the components needed to create a learning media system design. Second, design learning management system designs with schoology applications that have functions and specifications. Third, activate and verify schoology application accounts in the learning sequence. Fourth, conduct a performance test of the performance of a blended learning system. Fifth, the implementation of a learning system based on blended learning. The flow of research procedures carried out, as follows:



**Figure 1. Research Flow**

**RESULTS AND DISCUSSION**

Physical education teaching patterns can be divided into several stages: (a) introducing what will be learned and warming up; (b) skills development that contains introducing skills learned; (c) development of skills that contain learning skills; (d) the development of skills that contain correcting movements when things go wrong; (e) skills development that contains the application of skills; and (f) appeals and conclusions. Data collected through questionnaires and structured interviews. The findings indicate that the briefing model must consist based on: (1) core competencies and basic competencies; (2) Collaboration between lecturers and teachers with multi-aspects, namely pedagogical, personal, professional, and social aspects; (3) sharing learning resources by utilizing the advantages of learning resources on campus and partner schools. Based on the 3 things, the effectiveness of the use of physical education teaching material using Schoology was measured by using an assessment of 45 students in the form of a questionnaire with 21 statements divided into 3 aspects namely ease, attractiveness, and usefulness. The following results from filling out the effectiveness questionnaire using physical education teaching material using Schoology. The research results obtained in the form of an increase in physical education learning achievement; First, 90% of students become more focused, disciplined, innovative, creative, and interactive in physical education learning. Second, 85% of students implement student center learning and 4C in physical education learning. Third 87% of students learn to use ICT-based teaching materials (e-learning in the form of LMS) and digital learning resources (videos and e-books) in creating cognitive, psychomotor and character development. The

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implementation of blended learning, creating changes in the learning climate, supporting school equipment and collaborating educators with students are the keys to successful learning (Francis, R. & Shannon, S.J., 2013).

## CONCLUSIONS

There are three conclusions of the results in the study. First, the needs needed to create a learning atmosphere and climate. Second, develop strategies, approaches, and learning models for student center learning and 4C. Third, creating a technological innovation and learning media 4.0 (blended learning), especially in physical education in schools that serves to help and facilitate the learning process from introduction, core to cover on each core competency / basic based on scientific methods. Based on the conclusions, there are two suggestions put forward. First, the learning media that has been designed can be developed with its functions and uses. Second, the use of the concept of blended learning in the learning process can be applied from elementary school level to university level. In essence, technology as a tool and interaction between teachers and students is a priority for learning.

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