APPLICATION OF ONLINE LEARNING DISRUPTION IN TENNIS COURSES

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Abstract:

The Faculty of Sport Science (FSS) in Universitas Negeri Padang (UNP) is currently facing a significant drawback in the technical skill course due to the transformation from offline learning to blended learning. The main problem is that the practical tennis course module is not available in the university, while the course is supposed to be mandatory for the students to undertake. The course aims to enable the students to create game models that can improve their skills and willingness to learn and play tennis. Practical tennis course is possible to be conducted by mixing offline and online learning. Therefore, the objective of this research is to develop an e-Module practicum for Tennis course using information and communication technology that revolves around the theme of media and learning resources in the Industrial Revolution Era 4.0. Research and development method are utilized throughout the whole research process. The process includes initial data collection, planning, product draft development, initial field trials, revising test results, field trials, product improvement from field tests, field implementation tests, final product improvements, and implementation of products that have been developed. The results showed that the validity level of the tennis learning e-Module was 90.2% (very valid), the practicality level was 92.4% (very practical) and the student response was 82.6% (very good). From the result, it is proven that the digitalization-based tennis learning e-Module is feasible and practical as a source of independent learning in the Department of Sports Education, FSS in UNP.

Key Words: - Disruption, e-Learning, Online Learning, Tennis Course Subject.

Introduction

The transformation of offline learning to blended learning is something very difficult for both lecturers and students to adapt to. There needs to be prepared in dealing with the policies issued by the Rector of the UNP which states that theoretical courses can be conducted online, and practical courses are conducted semi-online or in half, namely 1-8 meetings offline and 9-16 meetings online or vice versa. Before the transformation of learning, the teaching team of tennis course subject only had textbooks in hard copy form, namely tennis books which contained theories about tennis and there were no digital teaching materials that were accessible for students with their gadgets. Based on the experience from July to December 2020, lecturers can only deliver theoretical lessons to students, while in fact, the tennis course is a very practical course that requires a lot of physical activity.

Competence in this tennis course is that students can apply some basic tennis techniques by the rules that apply. Besides that, students are required to utilize learning media in the use of information technology independently or in groups. Based on this finding, as a lecturer in charge of courses, they must be creative in preparing teaching materials or digital practicum

modules by utilizing computer information technology, so that tennis learning goals can be achieved. The end goal is to create a blended learning program for tennis course subjects and to create a more seamless online learning experience (Greipl et al, 2020; Rapanta et al, 2021). The objective of this research is to develop an e-Module practicum for tennis course by utilizing the latest information and communication technology in the Industrial revolution 4.0 that can be easily accessible by students anywhere, anytime with their gadgets.

Based on the leading research themes and topics developed at Universitas Negeri Padang in 2020-2024, namely the field of digital learning services with the theme of media and learning resources in the Industrial Revolution Era 4.0. Therefore, the main topic that is chosen by the author is media and e-Learning technology by the policy for blended learning courses. Hence, the urgency of this research is the realization of digitalized learning media for tennis courses. The expected output of this research is a reputable International Journal indexed by Scopus. Contributing to the knowledge of the existence of technology-based e-learning media in supporting the achievement of the UNP Higher Education Research Strategic Plan.

Tennis is a subject about the skill that can be modified and designed in various ways in such a way that it can be easily learned, implemented, and fulfills the need to be able to play tennis, using a service delivery system that is comprehensive and designed to find problems in the cognitive, affective and psychomotor domains (Hornery et al, 2007; Marchal-Crespo et al, 2013). Estevan & Barnett (2018) explains that competence in tennis is the ability to understand and apply skills with the aim of 1) developing knowledge and skills relating to tennis; and 2) developing self-confidence, personal values through student participation in tennis lectures and also being able to make tennis as a way to improve fitness and achievement at the same time. Based on these skills, it is proven that there is a huge gap for innovation to provide learning materials for students because lectures are carried out using blended learning, which is why it is necessary to develop an e-Module learning media. According to (Louk & Sukoco, 2016) graphic and electronic tools are used for revealing, processing, and rearranging visual information. Furthermore (Giri, 2016) also clarifies that learning media is a tool used for teaching to deliver the lesson. Utilizing the media all around helps the learning process. Therefore, all media will be made in the form of e-Modules. This means that e-Module is an electronic-based module such as tool/media that contains materials, methods, and evaluations of tennis courses arranged systematically and attractively for students to achieve the highest competency through digital. According to Dwiyogo (2018), e-Module can optimize the learning process so that the delivery of subject matter will be easier. Criteria in media selection must be based on accuracy in learning objectives (Hill & Hannafin, 2001; Vieira & Tenreiro-Vieira, 2016). Sumiharsono & Hasanah (2017); Agrawal & Awekar (2018) added that other criteria that must be considered in the selection of media such as e-modules must be by the level of students' thinking. Because the use of learning media at this time is teaching the millennial generation which is supported by advances in information and communication technology that can be used by educators in achieving more optimal learning outcomes.

Methods

The research method used was the research and development (R & D) approach meaning that research is used to create a product by testing the effectiveness of the product (Akhilesh, 2014; Su et al, 2021).

The stages of the research are 1) problem and potential stage, wherein this stage is to find the root of the cause and preliminary source in learning; 2) collecting data where the author analyze a product that will be made to find out how important the product is in overcoming the problems encountered in the field. This can be done by using questionnaires and observations; 3) designing a product, where the researcher created a product according to potential problems found; 4) validating the design, where the tennis course e-Module that has been developed undergo a feasibility testing by a reviewer and an assessment from the faculty; 5) product review, which means from the product testing before, some revisions were collected according to suggestions and inputs from experts; 6) second product testing, wherein this stage it is another chance to get more suggestions and inputs about the product; 7) second product review, which means from the second product testing, some revisions were collected according to suggestions and inputs from experts; 8) third product testing, where in this stage it is the last chance to get more suggestions and inputs about the product based on the previous reviews; 9) last revision, where in this stage it was the last chance to fix the product before the final launch based on the last revision; and 10) the final product launch, which means that there are no more revisions and the E-module for tennis courses can be used for the blended learning lecture process.

Results

The result of this research was in the form of digitalized base tennis e-Module course for tennis lecture material. This e-Module id was designed by the researcher which aims to be an alternative source for students to learn anywhere and anytime. In addition, the tennis learning e-module is also designed to help lecturers in the learning process to change the learning pattern from Teacher Centric to Student Centric and from direct media to multimedia. Users of digitizing tennis learning can be used as a medium for interaction between lecturers, experts, and students related to learning materials (Johnson et al, 2010). The model used in this development is the simplified Borg & Gall development model according to the needs of this research, which consists of 1) the research and information gathering stage; 2) the planning stage; 3) the initial product development stage; 4) the product field trial stage on a small and large scale; and 5) product revision (Gapp et al, 2007).

1. Research and information gathering

The research and data collection are the stages of selecting the product, namely a Lecture product that is created by the consideration of whether the product is really important and needed in the world of lectures and education. This research and data collection phase consists of a literature study and field research. A literature study was conducted to collect various information related to the research to be carried out, which is the tennis learning e-module.

This study aims at finding concepts or theoretical foundations that strengthen the tennis learning e-module product because the e-Module is can only be done in both practical and theory by the students. Through this literature study, the scope, breadth of use, supporting conditions is studied so that the tennis learning e-module can be used, as well as its advantages and limitations. This tennis module is quite interesting because it is given and exemplified by well-known national tennis players who have strengthened the Indonesian National team in international events.

In the next stage, a field survey is carried out to complete the research literature in providing the basic knowledge for designing a tennis learning e-module product. The survey was conducted by interviewing a few lecturers, tennis experts, and IT experts. From the interview results, it is found that the tennis learning resources used by students so far are textbooks and tennis teaching materials, in addition to direct learning (offline) provided by lecturers. The limited availability of tennis textbooks and the use of the Semester Credit System (SKS) requires students to use textbooks when tennis learning takes place either face-to-face, structured, or independently. As a result, the students are not optimized in learning and understanding the learning materials from the lecturers. Besides that, students are also given several alternative learning methods to be developed according to the student's ability level (Damrah et al, 2018). This is why an alternative, easier, and more interesting way of learning is much needed in the university, such as the electronic module (e-Module). e-Module can be done through websites such as blogger.com and the like so that students can easily access all the information as an independent or group learning resource that can be used anytime, anywhere, and anywhere.

2. Planning stage

This e-Module is designed specifically based on the result analysis from the research and data collection stage. There are a few things to do in this planning stage, which are deciding on the module titles which are based on the basic competency or learning materials from the syllabus. The module was written in Microsoft Word and uploaded to blogger.com using various colors and fonts to make the information easier to understand. The tenning learning materials e-Module is arranged according to the goal of the learning objectives. The preparation of the material on the e-module uses several relevant tennis books. The evaluation tool in this e-Module is using a form of practice question in each learning activity and evaluation questions in the form of physical activity. Besides that, the tools needed during the research were also prepared, in the form of a questionnaire to test the validity of learning material experts, a questionnaire to test the validity of a learning media expert, a questionnaire for practicality tests by the lecturer, and a student response questionnaire to get the right and useful information for the next stage. The design that can be generated in this e-Module are as follow:

❖ **Early introduction to tennis learning design**: Two players stand facing each other within 4-5 meters apart and take turns in throwing and catching. Throws can be made a curve, straight, and bounce. This can be done with the legs open or one of the opposite legs stepping forward. Do this in an alternate, throwing the ball at each other using the forearm. When catching the ball, watch the throw until it reaches your hand. Follow the instructions and the

rules on each throw and do up to 30 throws. This practice is very useful for 4 aspects: 1) staying focused on the ball; 2) practicing the accuracy target; and 3) developing coordination between eyes, arms, and feet. The goal of success = 30 times throwing and catching without fail. The criteria of success are: The criteria for success are throw with your forearm, step forward with the other leg when throwing, look at the ball when it reaches your hand. As for increasing difficulty: Widen the distance to 10 meters, use throwing motions with the upper arm, throw the ball in various ways, up, down, and sideways before the ball is caught. Specifically, "tennis play and stay" it can be played in small courts which are lined with net and lines, similar to the mini tennis court. The point is that students play mini tennis in pairs by hitting the ball alternately starting with serving. Students can use real tennis rackets or any item that is similar to tennis rackets. Soft tennis balls or used tennis balls from the faculty can be used. The rules can be given by the lecturer and given to all students who study this e-module.

❖ **Forehand method design**: Students will learn forehand in general in this e-Module, even though there are various types of forehand. The techniques are how to throw a ball with a left or right hand and can be done horizontally or with rotation. Similar goes with the grip it can be done according to the alternatives provided by the lecturers. The initial concept is to get the students' enthusiasm and ease of doing forehand throws.

❖ **Backhand method design**: The backhand is one of the most crucial techniques needed to play tennis. It is relatively hard to practice compared to forehand because humans are more likely to swing their hands in forwarding motion rather than the opposite direction.

❖ **Service method design**: The implementation of service in tennis has a similar process in forehand and backhand techniques. The steps are including preparation, swing, ball contact (impact), follow-up movement, and grip.

❖ **Volley method design**: Volley is generally played in the front and center of the playing area. The main objective of doing a volley is to accelerate the return of the ball to the opponent's area by cutting the speed of the incoming ball. In addition, because volleyball is done in front, it gives the possibility to easily attack or kill the ball in the opponent's area through this technique.

2.1 The development of the initial product

After further planning, the researcher proceeds to the development stage, which is to craft the form of the module to be tested in the field. The tennis e-Module consists of a few components which are cover, foreword, and instructions for using e-modules, learning objectives, concept maps, material descriptions, evaluations, glossaries, and bibliography. The learning material started with an introduction to tennis theory for students and also technical learning material followed by tests that the students need to take at the end of each lesson. The e-Module consists of 6 main topics which are: 1) introduction in playing tennis; 2) forehand technique; 3) backhand technique; 4) volley; 5) service; 6) combination or variation; and 7) playing tennis. The cover of this e-module can be seen in Fig 1 below.

Figure 1: Tennis e-Module cover

First learning example

Description of learning

Before the course starts, students are given the introduction of tennis so that the students can experience the ball and the racket. It can also help students to escalate their enthusiasm in playing tennis. The introduction in tennis is given in practice and playing with the focus in quantity rather than quality. The main purpose is so that the students are able to control the ball in every situation and condition given by the lecturers. All the techniques needed in playing tennis will be obtained roughly in this introduction

There will be evaluation tests at every end of the lesson in the form of cognitive and motoric tests.

Cognitive test example

    A.   Formative Test

Question 1

Explain how to students can control the ball in tennis

Question 2

Explain the training form that is needed for an introduction in tennis game for beginners. Complete with a diagram.

Question 3

Explain how to do "tennis play and stay" as a method for kids or beginners to play tennis.

2.2 Expert validation

Learning materials expert validation aims to assess the suitability of the material with competence, the suitability of features with the materials, presentation, and linguistic components of the tennis learning e-module (Zhou & Brown, 2015). Material validation was carried out by 2 material expert lecturers. The validation process was conducted twice, which includes initial validation and validation after revision. The e-Module is then revised again based on the revision result. The percentage of learning material validation results by the two material experts can be seen in Table 1 below.

Table 1: Expert validation

No	Indicator	%	Criteria
1	Suitability of purpose with the learning material	98%	Very valid
2	Suitability of features with the learning material	92%	Very valid
3	Presentation	90%	Very valid
4	Language	88%	Valid
5	Depth of learning material	90%	Very Valid
Average		91.6 %	Very Valid

2.3 Validation from media expert

Validation by media experts aims to assess the feasibility of digitalization-based tennis learning e-module graphics. The media validation is conducted by 1 media expert lecturer. The review process is done twice which is initial validation and validation after revision.

Table 2: Media expert validation

No	Indicator	%	Criteria
1	Benefits	92%	Very valid
2	Physical appearance	87%	Valid
3	Media Components	93%	Very Valid
4	Consistency	90%	Very valid
5	Information	85%	Valid
Average		89.4 %	Valid

2.4 Product practicality testing

The practicality test or product field test aims to see the level of practicality and student response to digital-based tennis learning e-modules from the user side of both lecturers and students because they practice in real situations. Both the situation, the number of students, as well as the learning facilities and infrastructure are all within Campus.

Table 3: Product practicality testing

No	Indicator	%	Criteria
1	Suitability of purpose with the learning material	90%	Very valid
2	Presentation	92%	Very valid
3	Language	88%	Valid
4	Effectiveness and Efficiency	88%	Valid
5	Communicative	90%	Very valid
Average		89.6 %	Valid

2.5 Students' response

Based on the result of the questionnaire, there are still some inputs and suggestions to improve the e-Module. There are also some comments and feedback from students that can be found in Table 4 below.

Table 4: Students' response

No	Rated Aspects	Comments
1	Enthusiasm	Interesting and can be done individually or in groups.
2	Effectiveness and Efficiency	Very helpfun in offline and online learning process.
3	Benefits	Highly suitable for current conditions
4	Communicative	Highly understandable

Conclusions

According to the research results, it can be concluded that the product created is the digitalized tennis e-Module. The validity level of the e-Module is very valid, very practical and the response from the students are very exceptional. The main goal is so that the students and lecturers that are taking the tennis subjects can add more insights and improve the tennis learning process in the future. All the future challenges need to be taken seriously by disrupting all forms of learning starting from preparation, progress until evaluation.

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Conflicts of interest

Conflicts of interest - There is no conflict of interest in this paper, and this is purely my annual research at the UNP Campus - Indonesia.

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