

# Computer Based Exam Development on PJOKCourse Knowledge Aspect Curriculum 2013 at SMASwasta Sinar Husni Helvetica *by Albadi Sinulingga*

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# Computer Based Exam Development on PJOK Course Knowledge Aspect Curriculum 2013 at SMA Swasta Sinar Husni Helvetia

Iskandar Fahmi  
Universitas Negeri Medan,  
Program Study Sports Education  
Postgraduate  
Medan, Indonesia

Email: [iskandarfahmi18@gmail.com](mailto:iskandarfahmi18@gmail.com)

Novita  
Universitas Negeri Medan,  
Program Study Sports Education  
Postgraduate  
Medan, Indonesia

Albadi Sinulingga  
Universitas Negeri Medan  
Program Study Sports Education  
Postgraduate  
Medan, Indonesia

**Abstract-** The purpose of this study is to develop a computer-based exam on aspects of PJOK curriculum subjects 2013. This research was conducted at the Sinar Husni Helvetia Private High School by using the Research and Development (R&D) research method which consists of three steps, namely 1. Research and information collecting, 2.Planning, 3.Development of the preliminary form of product. Data collection techniques in this study using interview techniques. Based on the results of an interview with Mr. Wagimin Souldi, ST as a teacher in the field of Sports Physical Education and Health studies at Sinar Husni Helvetia Private High School, that Sinar Husni Helvetia Private High School is a school that has used the 2013 Curriculum. The manual begins with the teacher making the question scripts, then the questions are typed and reproduced in sheet form which has taken 2 days, then the exam results are manually checked until the teacher gets the test results taking a long time, for Class XI which consists of 4 classes with 36 students detailing each class, with a total of 144 students, takes up to 4 days to correct exam questions and marking. Events like this always result in errors and discrepancies in the results of work and require a relatively long time, so teachers feel the need for the latest findings in the form of computer-based exam applications to cover the obstacles that have been encountered by the teacher.

**Keywords :**Development, Computer Based Exam, PJOK

## I. INTRODUCTION

The curriculum in Indonesia has undergone several changes. These changes are due to the demands of the times and government policies to renew and modify the education curriculum regularly in a certain period. In the course of history since 1945, the national education curriculum has changed.

The current curriculum in Indonesia is the 2013 curriculum. This curriculum is a fixed curriculum implemented by the government to replace the 2006 curriculum which is often referred to as the Education Unit Level Curriculum (KTSP) which has been in force for approximately 6 years.

In the process of implementing the Examination and assessment in accordance with the basic competencies (KD)

that have been taught. The process of student examinations carried out to get good results quickly and accurately is not an easy thing by combining the values that have been collected according to the test. This is because the teacher has not innovated in making test designs. The teacher designs and processes the test results manually, therefore the process of examining the test results and assessment results still requires a relatively long time. Therefore, it is not enough to do it manually, but we need a computer-based application system to support the implementation of the exam and the processing of exam results.

Physical Education, Sports and Health is one of the subjects in the education curriculum in Indonesia. The curriculum content of Physical Education, Sports and Health subjects in particular aims to improve the ability of knowledge, basic motion and advanced movement of students in the field of sports, and can implement sports activities in their daily lives. Standards of competency in Physical Education, Sport and Health are qualifications for students' abilities that describe their mastery of knowledge and movement skills in sports. These competency standards are the basis for students to understand and respond to local, regional, national and global situations.

In organizing Physical Education, Sports and Health learning, as in organizing learning in other fields, examinations need to be conducted. Exams are an inseparable part of the organization of learning as a whole. As learning on the subject of Physical Education, Sports and Health is organized to achieve a number of learning goals that have been identified and formulated based on in-depth review of the needs that must be achieved. The achievement of learning objectives is strived to use a series of learning processes that are carefully and thoroughly designed and implemented in earnest so that the learning objectives are achieved properly.

The exam serves as a measuring tool to determine the success of the process and student learning outcomes. Process is an activity carried out by students in achieving learning objectives, while learning outcomes are a number of students'

knowledge and skills after they receive their learning experience.

Education 4.0 is a phenomenon that responds to the needs of the fourth industrial revolution where humans and machines are aligned to get solutions, solve problems and of course discover new possibilities for innovation. Basic education to higher education, adjusting the education curriculum with the challenges and needs of the current era. A curriculum that opens access for millennials to gain knowledge and training to become competitive and productive workers. The industrial revolution 4.0 and its relation to education is the main and central thing to follow the flow of the industrial revolution because it will print and produce quality generations that will fill the industrial revolution 4.0. Education in the era of the industrial revolution 4.0 in the form of changes in the way of learning, thinking and acting for students in developing creative innovations in various fields. [1] In line with the explanation of the industrial revolution 4.0 in education. The development of computer-based exam application systems lately is very much needed and becomes the foundation for education units in the teaching and learning process. One of them is a computer-based and online-based exam application. This is because the national exams are already using a comprehensive computerized and online system at all levels.

The development of the Computer Based Test (CBT) application system has been done by Karfindo, who developed a Computer Based Test (CBT) application development application for high school (SMA) with this application students can immediately see the results the exam, not only knowing the results of the student exam the school can also see how many questions are difficult to do and choice of answer choices chosen by students, thus helping the school in analyzing the ability of students and can make decisions to improve students' abilities more effectively. [2]

Furthermore, research conducted by Sudar, A Yulianto and Wiyanto (2014) developed a computer-based independent competency test to improve student self-efficacy. The results of this study are applications that are made to have difficulty levels, have choice of material assistance, adjust to modern learning styles and encourage the occurrence of vicarious experiences [3].

Seeing the explanation of previous studies above need to be made a computerized system that can ease the burden of the teacher in the implementation of the test which becomes a measuring tool and learning evaluation. The computerized system in question is the student exam application system which includes the exam question scripts, question analysis, and student test score scores. This exam application system is a computer-based application that uses *HTML, PHP, databases and frameworks offline* so that it saves cost and time. Based on this application the teacher simply takes the students to the computer laboratory that the application has entered on each computer and explains how to use and carry out the exam. Student exam results will automatically be saved into the database, then the results will be automatically entered into the assessment format and ready to be printed.

Based on the explanation above, the researcher wants to conduct research into the development of a computer-based

exam application system. Certainly different from the research that has been done by researchers as has been described above. The difference is in the place of research, research time, product form, product material, and the system used. The system used by researchers is a computer system using *HTML, PHP, database and offline framework applications*. The research to be carried out is the research development of the exam application system by innovating it in the form of a computer-based application for the implementation of examinations and the processing of exam results in PJOK subjects at Sinar Husni Helvetia Private High School. The researcher wants to do this research because of the importance of building a system that is able to process the test implementation quickly, accurately, and accurately, and can become a school archive.

## II. RESEARCH METHOD

The method used in this research is research and development (Research and Development) which aims to develop and validate learning products. Research in this study uses the steps of *Research and Development (R&D)* from Brog & Gall (1983: 775) which consists of ten steps namely 1. Research and information collecting, 2. Planning, 3. Development of the preliminary form of product, 4. Preliminary field testing, 5. Main product revision, 6. Main field testing, 7. Operational product revision, 8. Operational field testing, 9. Final product revision, 10. Dissemination and implementation [4], but in this study only uses up to 3 steps namely 1. Research and information collecting, 2. Planning, 3. Development of the preliminary form of product. Data collection techniques in this study used a qualitative method using interview instruments.

## III. DISCUSSION

Based on the results of an interview with Mr. Wagimin Souldi, ST as a teacher in the field of Sports Physical Education and Health in Sinar Husni Helvetia Private High School, that Sinar Husni Helvetia Private High School is a school that has used the 2013 Curriculum. Constraints and difficulties faced by teachers according to aspects 2013 curriculum among the submission of material that has not been maximally, because too much material will be delivered while the allocation of time is only a little and assessment, such as assessing exam results that take a long time according to aspects of the 2013 curriculum from correcting exam questions to grading. The implementation of the test and correction of questions still uses the manual method that begins with the teacher making the question scripts, then the questions are typed and reproduced in sheet form, it has taken 2 days, then the students answer the questions, then the exam results are checked manually until the teacher gets the test results consuming quite a long time too, for Class XI which numbered 4 classes with details of 36 students per class, with a total number of students 144 students took up to 4 days to correct exam questions and grading. Events like this always result in errors and discrepancies in the results of work and require a relatively long time, so teachers feel the need for the

latest findings in the form of computer-based exam applications to cover the obstacles that have been encountered by the teacher.

Bernadette Tynan (2004) The test is also used as an evaluation tool to assess how much knowledge has been mastered and the skills that have been obtained [5]. Exams can be given paper or computer as an example using paper exams such as national exams in Indonesia that aim to assess the achievement of national standards with graduates on certain subjects in a group of science and technology subjects. [6] HendraYudi (2009: 143), an application is a collection of commands that are made to do certain jobs (specifically). The application is part of a computer device and can be used by users by installing the application that they want to use, so the application can run and can interact directly with users. Arief (2011: 23) HTML is one of the formats used in making documents or applications that run on web pages [7]. Nugroho (2006: 61) PHP or short for *Personal Home Page* is a scripting language that is embedded in HTML to be executed in server [14]. [8]: 9]. MhdBustanurRahmad et al (2014: 1333) *Database* is a collection of fields that have links between one file and another so that they form data buildings to inform traffic conditions in a particular language [19]. Siena (2009) *framework* is a *library* that has been organized in an architectural design to provide speed, accuracy, convenience, and consistency in developing an application [11]

According to Law No. 20 of 2003 concerning National Education System, article 1 paragraph 20 Learning is the process of interaction of students with educators and learning resources in a learning environment [12].

RusliLutan (2000: 15) defines physical education as sports and health is an educational process through physical activities. Through physical activity, children are directed to learn, so that changes in behavior occur, not only concerning physical aspects, but also intellectual, emotional, social, and moral [13].

M. Fadlillah (2014: 182) explained that the implementation of 2013 Curriculum learning was divided into three, namely initial or preliminary activities, core activities, and final or closing activities [14].

Sugiyono (2010: 64) states that the hypothesis is a *temporary answer to the formulation of the research problem formulated in the form of sentence questions* [15]. Based on the statement above, the hypothesis in this study is the development of computer-based exams that use *HTML, PHP, database* and *offline framework* applications are well constructed and the automation program carries out physical assessments by using computer applications that are developed capable of functioning as multimedia to assist the facilitator when Test assessments, as well as the value processing automation program developed, can be used by teachers to process grades and carry out exam evaluations automatically.

#### IV. CONCLUSION

The purpose of this study was to develop a computer-based exam on aspects of the knowledge of PLOK curriculum subjects in 2013. Based on interviews with Mr. WagiminSouldi, ST as a teacher in the field of Physical

Education Sports and Health in Sinar Husni Helvetia Private High School, that SinarSinar Private High School Husni Helvetia is a school that has used the 2013 curriculum. Implementation of the test and correction of questions is still using the manual method that begins with the teacher making the question scripts, then the questions are typed and reproduced in sheet form has taken 2 days, then the test results are checked manually until the teacher gets the test results take a long time, for Class XI which consists of 4 classes with 36 students in each class, with a total of 144 students taking up to 4 days to correct exam questions and marking. Events like this always result in errors and discrepancies in the results of work and require a relatively long time, so teachers feel the need for the latest findings in the form of computer-based exam applications to cover the obstacles that have been encountered by the teacher.

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