

Development of the UTBK Try Out Application with Simulation Methods to Increase Student Scores

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Abstract-Along with the rapid development of technology today, the use of electronic devices has become commonplace for generation z. One of the uses of the current pandemic era is for learning activities. This computer-based test Tryout application was developed as a student learning tool to face the real exam. By using the simulation method, students can do UTBK tryouts repeatedly until they reach the minimum target requirements set. This application is expected to provide convenience for students to know their abilities and can improve their knowledge. So that students can be better prepared for the exam.

Keyword: Application, Tryout, Simulation, UTBK

1. INTRODUCTION

In the current era of globalization, the development of technology and information is very fast and rapid. One of them is in the field of communication, where at this time practical and fast communication is needed. The use of ICT devices such as laptops, smartphones has become commonplace in generation z. In the pandemic era where there are limitations for students in learning, online learning is the right solution to transfer knowledge from teacher to student. One of the things that students must face in taking learning at a higher level is UTBK. UTBK itself is an exam or selection test that you take to enter PTN. The UTBK stands for Computer-Based Written Examination. There are three choices of clumps in UTBK, namely science and technology, soshum, and mixed. The UTBK test subjects consist of the Scholastic Potential Test (TPS) and the Academic

Competency Test (TKA). In simple terms, UTBK is the name of the exam and SBMPTN is the selection process. The implementation of UTBK by LTMPT has advantages because the test results are credible, standardized, and scores are given individually to participants.[1].

In general, schools hold enrichment to help students face exams and are carried out with practice questions using question and answer sheets. This work is very ineffective and efficient because it requires a lot of funds to procure questions and takes a long time to check the answers[2].

The more effective way according to [3] using a computer based test (CBT) so that students can study anywhere and take as many tests as they want. From this description, the author will develop a UTBK tryout application with a simulation method to increase students' UTBK scores.

2. LITERATURE REVIEW

2.1 Applications

The term application comes from the English "application" which means application, application or use. While in terms, the definition of an application is a program that is ready to be used which is made to carry out a function for users of application services and the use of other applications that can be used by a target to be addressed. According to the executive computer dictionary, application has the meaning of problem solving that uses one of the application data processing techniques which usually races on a desired or expected computing or expected data processing [4].

In addition, the application also has a function as a servant for the needs of several activities carried out by humans such as systems for buying and selling software, online games or games, community services and almost all processes carried out by humans can be assisted by using an application [5]. Several applications when combined will become one package or often also called an application suite, where the application has an interface position that has similarities so that it can be easily used or learned how to use each application.[2]. A good application can be used on all platforms and operating systems.

2.1 Try Out

Try out is a mechanism that is used as an exercise for students before carrying out the real exam [3]. Tryout is a comprehensive, systematic, and objective evaluation procedure whose results can be used as a basis for decision making in the teaching process

carried out by teachers. [6].

2.2 Computer Based Test

The determination of standards that continue to increase is expected to encourage the improvement of the quality of education, what is meant by the determination of educational standards is the determination of limit values. A person is said to have passed / competent if he has passed the limit value in the form of a limit value between students who have mastered certain competencies and students who have not mastered certain competencies[7]. If it happens on a national exam or school, then the limit value serves to separate students who pass and do not pass it is called the graduation limit, the activity of determining the graduation limit is called standard setting [8].

The purpose of holding UTBK is to predict prospective students and students who are able to complete their studies in higher education well and on time and provide opportunities for prospective students to take tests flexibly, namely choosing the location and time of the test. UTBK guarantees that prospective participants for the Indonesian Smart College Card (KIP Lecture) who are declared to have passed the requirements will not be charged [9].

The UTBK test material consists of the scholastic potential test (TPS), English, and the Academic Competency Test (TKA). Participants were grouped into several test groups, namely science and technology, soshum, and a mixture of both. It is important to remember that each participant is only allowed to take part in the UTBK once and must have a permanent LTMPT account before the account registration period is closed. Each prospective student is also allowed to choose two study programs at one PTN or one study program at two different PTNs each[10].

3. METHOD

The method used in system development is the prototype development method. The Prototype Development method is used in defining the user's first needs so that the user's needs and desires can be known then build a prototype according to the user's wishes, only after that the actual software application is made based on user comments on the prototype.

The advantage of this prototype model is that the user can immediately see the form of the software application to be built and from there, deeper needs can be explored as

material for the next software preparation.

3.1 Software Testing

Testing is the process of evaluating the software application that has been made, whether it has fulfilled the function of each software properly or not. Testing the software developed in this study using black box testing.

Black Box testing is a method of testing the functional system on the software by trying to find errors in the following forms:

1. Functions that are not working/broken.
2. Software interface error.
3. Data structure errors.
4. Performance error.

Black Box Testing Properties:

1. Robustness testing (testing the strength of the existing system) to ensure the system even though abnormal data is entered.
2. Performance testing (testing the performance of existing systems) testing the software part of the system to the hardware.
3. Endurance testing (testing the durability of the system) tests the durability of the software whether the system can withstand disturbing disturbances.
4. Behavior testing (testing the behavior of the system whether it is in accordance with the request) tests the behavior of the system based on the pattern "designed as it was originally".

The system design is carried out after the current system analysis stage is completed. The design stage is a continuation of the analysis process where changes are made to the current system. This is done to overcome the existing shortcomings, facilitate the work carried out by the actors involved and save work time. In addition, system design is made as a stage to prepare the system implementation process, and to clearly describe the processes desired by the user (user). The purpose of this system design is to design the proposed system after going through the process of analyzing and evaluating problems from the current system, so that the proposed system can overcome various problems that exist in the current system. This stage is very important in determining whether or not the results of the system design are obtained. The system design stage can be described as a design to build a system and configure software and hardware components so as to produce

a better system.

The purpose of designing this system itself is useful to produce a mobile-based Tryout application that is able to:

1. Make it easier for students to find out to what extent their ability to work on the questions to be tested.
2. To prepare for the UTBK so that students can provide maximum and satisfactory results.

3.2 Overview of the proposed system

At the stage of analyzing the current information system, the author tries to analyze the running system. From the results of the analysis, it turns out that the system that is already running still has problems as described previously. So the author tries to propose a system design in the form of a system application that can support students to practice without limitations in order to improve their ability to face UTBK.

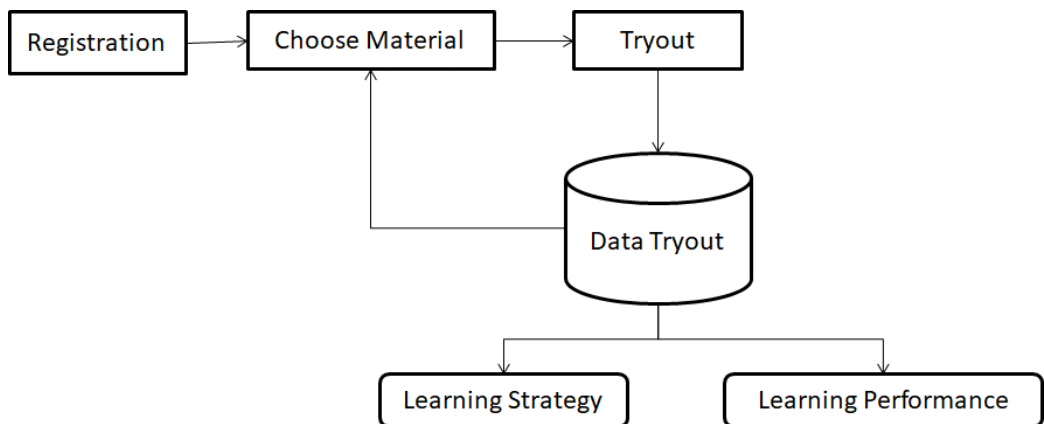


Figure 1: Overview of the proposed system

4. RESULTS AND DISCUSSION

The implementation of this system makes manual work easier for all users who will use the system. In implementing the design that has been made, there are several things that must be needed. Hardware and software are two things that are always needed in implementing an existing design. System implementation is the stage where the system is ready to be operated at the actual stage, so that it is known whether the system has been created.

The application that has been built is implemented in all classes to get a comprehensive picture of all existing processes. The results of the tryout show that the questions with the hots type are still a weakness of students. While the types of simple questions in general have been mastered by students. The following are the test results of the 3 types of questions in table 1.

Table 1: Student performance by type of question

Type	Performace
Easy	90%
Moderate	79%
Hots	56%

5. CONCLUSION

Based on the application that has been built, it can be concluded that this tryout simulation can help students practice independently and can work on practice questions anytime anywhere and get an overview of the results in real time. The results of the students also become an overview of the quality of students and become input for the development of teacher teaching strategies. Tests that are carried out on a scheduled basis for all students can also map students' abilities on certain types of material that need emphasis to be further improved. From the simulation results, 78% of students were able to get a score above 80 on 3 simulation exam opportunities.

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