

## **Chapter Two**

### **Literature Review**

This literature review defines significant aspects related to this research. There are some important points mentioned in this chapter. In this literature review, it discusses Indonesian's National Examination which covers the implementation of National Examination and the techniques in conducting National Examination. Then, it also discuss the computer-based test in English national examination which covers the use of computer-based test in English national examination, the implementation of computer-based test in English national examination, the challenges in using computer-based test in English national examination, and the strategies to face the challenges in using computer-based test in English national examination. In the last part of this chapter two, it presents about the review of related study and the conceptual framework related to this research.

#### **Indonesian National Examination**

National Examination is an assessment which is performed at schools and adapted as National Evaluation Standard (Jamiludin, Darnawati, & Uke, 2017). Likewise, Elfiza, Rusman, and Nasir (2015) argued that National Examination is a form of assessment in learning outcomes which becomes a standard to measure the students' success in the learning process. From the statement mentioned, national examination is a national evaluation standard used by the government to analyze, measure, and acquire the students' learning outcomes. According to Sulisty (2009), National Examination is used to improve the quality of national education practices.

Hence, this national examination can be used by the government to determine the education quality in each region especially each school. He also mentioned that National Examination represents an effort to measure the students' achievement. On the other hand, Sukyadi and Mardiani (2011) said that National Examination is a test used to rank and compare individuals and schools. The Regulation of the Minister of Education article 1 number 4 stated that National Examination is an activity to measure the graduate competence of specific lesson as national which refer to the Graduation Competence Standard.

**The implementation of Indonesian National Examination.** Indonesia uses National Examination as the evaluation standard to measure the students' knowledge since 2005. Also, the implementation of national examination has appeared some problems. Hidayah (2013) stated that the implementation of National Examination spends a lot of money. For the reason, National Examination needs some components such as providing and distributing the items to all the regions. Besides, the government needs much money on providing the items of National Examination. Likewise, it appears unfairness for the students because the result becomes the determination for graduation. The statement mentioned is in line with Saukah and Cahyono (2015) who argued that National Examination has created unfairness, and students become a concern.

**Techniques in conducting National Examination.** There are two techniques in conducting National Examination, Paper-based test (PBT) and Computer-based test (CBT). The first national examination is paper-based test (PBT). Paper-based test was implemented from 2005-2016 in Indonesia. According to Jamil, Tariq, and Shami (2012), the paper-based test is an

assessment technique examined manually using paper which contains the complete examination. Most of the schools in Indonesia still use the paper-based test because it is easy to be handled. Jamiludin et al. (2017) stated that students are familiar with the use of paper-based test in their National Examination. Seeing from the previous studies, some students prefer using paper-based test as National Examination technique. However, the technique of national examination appears the problems especially for the implementation. In implementing the Paper-based test, it needs a lot of preparation.

The second national examination is computer-based test (CBT).

Computer-based test is the new technique in conducting National Examination in Indonesia which examines the students using a computer. Jamiludin et al. (2017) argued that computer-based test is quite a new thing for students. The computer-based test technique has been implemented from 2015 until present. However, only some schools have still conducted the computer-based test in students' National Examination in 2015-2017. From the statement mentioned, only some schools which have better facilities can conduct the computer-based test. The use of computer aims to change the use of paper in the Indonesian National Examination.

### **Computer-Based Test in English National Examination**

The development of information and communication technology appears to help teachers and minister of education in assessing the students. According to Terzis et al. (2011), assessing students is very important in educational development because it measures the students' learning. Moreover, teachers may

use the technology in order to assess students in many different settings. The technology which is used in education is the computer.

Computer-based test is an examination using a computer which is conducted in school to drill, tutor, and test the students. As a concept of examination, the implementation of computer-based test is different with the implementation of paper-based test. Computer-based test program has been used increasingly in school to replace more conventional teaching media (Mubashrah, Tariq, & Shami, 2012). Nowadays, the development of the teaching media requires the teachers to use computer in teaching and testing the students. Furthermore, Thurlow, Lazarus, Albbus, and Hodgon (2010) argued that computer-based test has arisen as one of the fresh innovative methods to assess the students.

**The use of computer-based test in English National Examination.** The use of computer-based test appears some different opinions in the society of the schools. The computer-based test is still a new technique in conducting National Examination. The use of computer has been seen as a burgeoning of assessment (Brown, 2004). Besides, the teachers may easily assess the students on various aspects of languages such as vocabulary, reading, speaking, writing, and listening by using computer. Moreover, the use of computer eases the teachers in scoring students. Then, the teachers can score the students quickly, and the score will be more accurate. Brown (2004) argued that computer can score electronically for reporting the result quickly. Furthermore, students can perform responses on the computer in different stations.

According to Jamiludin, Darnawati, and Uke (2017), the application of computer-based test in National Examination is believed to increase students' motivation, develop the data collection accuracy, and inform the accurate final test results. Besides, the students' motivation can increase the use of technology. For example, computer becomes the interesting media for students. Then, the use of the computer can develop the data collection accuracy such as the items will be tested. The final test results will be more accurate than using paper manually because the computer has been setted to score the result electronically. Besides, the computer-based test also allows new methods of measuring students which outgrow the traditional multiple choice and constructed response items. The use of computer in the National Examination expects to ease the students in conducting the test, the education institution in grading the students, and decrease cheating between the students.

**The implementation of computer-based test in English National Examination.** The computer-based test has been implemented in the senior high schools since 2015. The implementation of computer-based test had still been tested in 2015 as well. Likewise, the changes from paper-based test to computer-based test give a lot of change in increasing the quality and the affectiveness of assessment (Sulistiyono, Suyata, & Rahayu, 2016). According to Kemendikbud (2015), although the computer-based test appears a lot of problems, the implementation of computer-based test is successful and gets praise from other countries in the first year of implementation. Based on Tribunnews.com (2018) the problems appear in the implementation of computer-based test were the students can not log in and the students faced the application of the computer-

based test was suddenly log out during the test. Besides, there were also lack of the electricity connection which happened in some of regions in Indonesia. The problems happened becomes a consideration for the stakeholder such as the education minister and the schools to support the computer-based test in the next year with better facilities. Basically, the implementation of computer-based test is as same as the learning process using a computer. Computer-based test can be conducted in computer laboratory which has been connected to the server. Thus, computer-based test also can be conducted in the classroom which has been laid out to the computer.

Hidayah (2013) stated that there is something which is needed to be considered in the implementation of computer-based test in the national examination. Firstly, it is the authentication process in computer-based test which is the important to determine whom allows joining the test. Usually, the test of participants will give a username and password in this process which will be used to log in. Secondly, it is the item. The items in computer-based test are selected randomly, so the participants get different set of the items. Basically the items are same, each students gets a set of questions. Therefore, the item number 1 for students A can appear as in number 10 for students B. Additionally, the item is done to prevent the cooperation between the participants. Thirdly, it is the computer-based test system. The test is conducted at the same time. Consequently, it needs a support software and hardware called as client-server which the participants' computer (client) are connected with the computer-based test system through a server. In the implementation of National Examination, the items are the objective tests. The tests are in a form of multiple choice questions. The items are

50 items consisted the multiple choices with 5 choices such as a, b, c, d, and e, and the items are given 90 minutes to answer (Jamiludin et al., 2017).

### **Challenges in using computer-based test in the National Examination.**

Terzis et al. (2011) argued that the use of computer is believed in perceiving enjoyment from the instrumental assessment of technology. Some students enjoy when they work with the computer because they commonly use the computer. However, the use of computer-based test as the evaluation system appears some challenges faced by the students. The first challenge in using computer-based test includes the students' familiarity with the computer. Jamiludin et al. (2017) argued that some students are not familiar to do the examination using computer. Besides, it can influence the students work because it is the first experience for them in implementing computer-based test in the National Examination.

The second challenge in using computer-based test in national examination that was faced by the students was the computer facilities. Students from schools with incomplete facilities may conduct the test lately, or they should join in the other schools test with complete computer facilities. Based on the researcher's experiences, the students will be divided into two or three groups to conduct the test in schools with incomplete facilities. Besides, the students from group 1 took the test in the first session at 7 – 9 a.m., and the students from group two took the test in the second session at 13- 15 p.m.,. Based on the previous study, it is unfair for the students who get second session. It is believed that students who conduct the test in the afternoon, they become less of spirit because they wait for long time to conduct the examination (Sulistiyono, Suyata, & Rahayu, 2016).

The third challenges of using computer-based test in national examination are the server and electricity. Jamiludin et al. (2017) stated that in implementing the computer-based test, it needs the server and the electricity. When the server does not run well, the students' computer will be slow down so that it can waste their time in finishing the test. Moreover, it also can make the students become feel panic and ruin their concentration in doing the examination. Furthermore, it is possible that the electricity goes out. Therefore, the problems mentioned can be disappointed for the students because they work in the computer and they will feel disturbed. Based on the current issue on Kompas.com (2018), there was a challenge appeared in the implementation of computer-based test 2018. The data showed that the students faced the challenge of the server. The server was getting error during the test. Therefore, the students who got the session had to delay the test around two hours. Besides, it also affected the students who got the next session because their test also delayed.

**Strategies to face the challenges in using computer-based test in the National Examination.** The use of computer-based test appears some challenges, so there are also strategies to face the challenges. The computer-based test can be viewed as the challenge for some students because they are not familiar with. In the strategies to face the problem, the students have to practice using the computer whether practicing in schools or operating the computer by themselves. In this case, perhaps the schools can help by conducting such test using computer in order to train the students (Sulistiyono, Suyata, & Rahayu, 2016). Moreover, Sulistiyono et al. (2016) argued that to face the challenges about the session in conducting the test, the schools should provide better facilities of computer.



Besides, the strategies to face the challenges of the internet and the electricity can be solved by the schools. According to Sailan (2016), schools can solve the problems faced by the students by adding the bandwidth so that the speed of connection will increase. Then, for the electricity, the schools can do cooperation with State Electricity Enterprise.

### **Review of Related Study**

In this section, the researcher reviews two similar studies which focus in studying the implementation of computer-based test. The first study was from Nurhidayat (2016). In his study, it aimed to describe the implementation of computer-based test national examination and the challenges in the implementation of computer-based test in national examination of senior high school in Wonosari. In this research, the researcher used qualitative research method and collected the data by interview, observation, and study documentation with the participants. The participants of the study were students of senior high school in Wonosari, the head of TIM UN Disdipora DIY and the head of the curriculum section of Disdikpora Gunungkidul. The results of the study showed that the implementation of computer-based test in national examination of senior high school in Wonosari included the preparation stage, the management stage, and the challenges in the implementation of computer-based test in national examination. Besides, there were two challenges in the implementation of computer-based national examination of senior high school in Wonosari. First challenge of computer-based test in national examination was the technical barriers including about a power outage, lack of classroom, and lack of computer facilities. The second challenge of computer-based test in national examination was the

non-technical barriers including the students' anxiety in conducting the computer-based national examination.

The second study from Gelista (2018) discussed about the implementation of computer based national examination regarding the junior high students' perception. The purpose of the study was to describe the students' perception, identify the problems related to the technical lesson on the computer in national examination. Also, it aimed to find out the strategies used by students to face the problems. Besides, there were 140 junior high school students in Malang who studied. In addition, this study used qualitative and quantitative research approach. The researcher used questionnaire as data collection method. Then, the results showed that most of the students strongly agree towards the computer-based national examination. Also, they had positive perception that they eased in using the computer, and the English items were clear and easy to understand. Then, to face the problems such the internet connection, the server, or problem in login, the strategy used by the students is by asking for help from the technician or test supervisor to overcome the problems mentioned.

In conclusion, the first study from Nurhidayat (2016) is similar with this research in aspects of the implementation of computer-based test. The strength of this study is that the researcher investigated the challenges in the implementation of computer-based test. It helped the researcher to get more information about the challenges in implementing computer-based test. Meanwhile, this study focuses to collect the data by seeing the infrastructure, human resources, and method. Then the second study from Gelista (2018) is also similar with this research. In her study, it focuses the implementation of computer-based national examination

based on the students' perception. The problems in the implementation and the strategies used by the students to face the problems became the strength of the study. However, this study uses mix method which combines quantitative approach and qualitative approach.

### **Conceptual Framework**

National Examination as mentioned and discussed in the literature review is obviously explained to measure, evaluate, and acquire the students' ability through national education standard applied by the ministry of education and culture to be implemented in schools. The teachers' teaching role and the ministry of education and culture are the factors influencing the implementation of National Examination. Besides, computer-based test as mentioned and discussed in the literature review showed that the use of computer can gain the students' motivation. Furthermore, this research investigated the students' perception on the use of computer based test in English National Examination. Hence, this research also focuses on the challenges faced by the students in conducting computer based test and the strategies on the use of computer based test in English National Examination.

Firstly, the study focuses on the challenges faced by the student on the use of computer based test. The use of computer becomes new thing in the implementation of National Examination. The implementation of computer based test as suggested in the study from Nurhidayat (2016) will be investigated in the recent study to see the challenges of the computer based test in national examination. Besides, the research also examined to find out whether the students

are favor or against toward the use of computer based test in English National Examination.

Secondly, the study aims to know the students' strategies in the use of computer based test. These strategies are used by the students to overcome the challenges in the use of computer based test. Therefore, the following chart is to simplify the concept of the research.

Figure 1

*Conceptual Framework*

