CHAPTER I
INTRODUCTION

The justification and feasibility of this study are described clearly into seven sections namely research background, research questions, research objectives, scope of the research, product specification, research benefit, and definition of terms.

1.1   Research Background

Measuring the educational successfulness can be done through assessment. As one of international evaluation scale, Programme for International Student Assessment (PISA) determines the academic competence level of Indonesian students. It is an ongoing triennial survey to assess how well the 15-year-olds students acquire key knowledge and essential skills to fully-participate in modern societies (OECD, 2016). Answering PISA questions requires the ability of reasoning and problem solving which are included as Higher Order Thinking Skills (HOTS). A learner is considered having HOTS when he/she can apply the gained knowledge in new context (Wardhani, 2005). However, the result of computer-based PISA in 2015 which was released by OECD (2016) showed that Indonesian students' achievement were still below the average of all OECD countries. Whereas, as international community, the global perspective about quality of education is important to prove that the policy makers is successful in improving the international standard demand in education sector. Therefore, educators' effort in habituating students to higher thinking level questions before the upcoming PISA in 2018 was very important.

To enhance English learning as an international language functioning as a life skill and an important tool for acquiring science and technology in the global era (Sulistyo, 2009), English becomes one of subjects tested in the form of standardized multiple-choice test in National Examination (*Ujian Nasional or UN*). *UN* is no longer serves as an exclusive determining factor in student graduation, but rather, it serves to map the quality of the learning program and/or the school as mentioned in the Government Regulation of the Republic of

Indonesia No.13 Year 2015. Therefore, the detail condition of education in Indonesia can be portrayed by this educational mapping, and thus some follow up actions can be further taken to improve it.

In line with the advancement of technology, Indonesian education sector began to modify Paper-Based Test (PBT) to Computer-Based Test (CBT) in the academic year of 2014/2015. Compared to Paper-Based National Exam (PBNE), Computer-Based National Exam (CBNE) has a number of advantages such as efficiency and immediate scoring to get the result by utilizing the advancement of technology. It is an effective solution for carrying out the evaluation or educational assessment conducted on large number of students (Sulistyaningsih, 2016).

In the early investigation, it was found that SMP Negeri 1 Sedayu has implemented the CBNE since the academic year 2015/2016. The curriculum used for the ninth graders in academic year 2017/2018 was still *Kurikulum Tingkat Satuan Pendidikan* (*KTSP*) in the first and second year of schooling which habituated them in dealing with the questions related to the remembering (C1), understanding (C2), and applying (C3) levels. According to the interview with the English teacher, she examined that the ninth graders were not very well-acquainted with the questions which has been designed to assess their analyzing (C4), evaluating (C5), and creating (C6) skills or known as HOTS questions. Whereas, HOTS questions has several essential role according to *Direktorat Pembinaan SMA Ditjen Pendidikan Dasar dan Menengah* (2017), they are: 1) Preparing learners' competence in facing 21st century challenge; 2) Increasing loving and caring sense to regional advancement; 3) Improving the students' learning motivation; and 4) Upgrading the quality of assessment. Furthermore, according to *Direktorat Pembinaan SMA Ditjen Pendidikan Dasar dan Menengah* (2017), the policy maker also increased the embedded HOTS questions in *UN* 2015/2016 to improve its quality. In contrast, tendency of the assessment techniques used in schools were recalling information or doing routine questions, which will not help students in enhancing their higher-order thinking skills. As an example, HOTS questions have not been embedded yet in semester test. Consequently, students were not well acquainted in solving HOTS questions.

Whereas, learners must deal with HOTS questions in *UN*. Therefore, it is very crucial for policy makers and educators to habituate learners with HOTS in teaching and learning and assessment. Besides, the limited number of computer and teacher's less ability in designing CBT also influenced the number of CBT simulation in the school which were not very optimal.

Concerning to the problem, the aim of the present study was to design the appropriate technology-based media to assess the ninth graders' high order thinking skills, preparing them in facing their next level of schooling which requires them to have higher critical thinking ability, and serve the demand of digital natives' era. The term digital native refers to someone who grows up using technology, and who thus feels comfortable and confident with it - typically today's children (Harmer, 2007). The product of CBT consisted of multiple choice questions which has been taken from the previous ENE. The questions were limited with the questions assessing the students' higher thinking level, especially in reading and writing skills. Furthermore, the media can be used in computer and smart phone. Thus, students can access it anytime and anywhere they want.

1.2 Research Questions

Based on the research background above, the formulated research questions are:

1. How is the design of technology-based media for assessing ninth graders' HOTS?

2. How far is the appropriateness of the designed technology-based media toward ninth graders?

1.3 Research Objectives

This study aimed at accomplishing the purpose as follows:

1. To produce the designed technology-based media for assessing ninth graders' HOTS;

2. To describe the appropriateness of the designed technology-based toward ninth graders.

1.4   Scope of the Research

This study was conducted at SMP Negeri 1 Sedayu which is located in Panggang, Argomulyo, Sedayu, Bantul, Yogyakarta for approximately four months. The participants were 20 students of the ninth graders in SMP Negeri 1 Sedayu in the academic year 2017/2018. The data were taken by conducting observation about the real condition of the research setting and interview to the English teacher of ninth graders. From the problem identification above, scope of the research was limited on the soft file product of media for assessing ninth graders' HOTS. Regarding many types of assessments, standardized assessment was chosen because of the urgency to habituate the students in dealing with the Computer-Based Test (CBT) and the questions assessing their higher thinking level before they graduate from their Junior High School. The researcher used iSpring Suite 9 in designing the standardized High Order Thinking Skills (HOTS) Quiz because of its practicality, time-efficient, and easy to develop compared to other software. Besides, it also has many useful supporting features which was needed to design the product. The multiple choice questions were taken from the latest ENE in the academic year 2012/2013 until 2016/2017 which were limited with the questions assessing the students' HOTS (especially for reading and writing). The package of HOTS quiz can be distributed to English teacher and all students as one of the assessment media.

1.5   Product Specification

Referring to the research objectives written above, the HOTS Quiz was designed in the form of soft-file product and implemented to examine how far the appropriateness of the product. It has been designed by considering the need of getting well-acquainted to HOTS Questions of *UNBK* in the academic year 2017/2018 and as preparation for their next level of schooling which requires them to solve higher thinking skills problems. Besides served the modern assessment demand, the soft file product was considered easier to be accessed. Moreover, it can be well-perform by using computer or smart phone. The students did not need the internet connection in doing the whole quiz. Moreover, the students can directly check their own score after submitting the whole answers

and even the detail review of the each answer. However, the internet connection was necessary to automatically send the learners' quiz result and review of their answers to the teacher's email.

1.6   Research Benefit

This study was expected to give benefits theoretically and practically. Theoretically, the result of this research may help other researchers in English Language Teaching (ELT) as their reference in conducting the similar research. Practically, it can be beneficial for students to be well-accustomed to CBT to improve their confidence in facing the CBNE and getting acquainted in solving the higher order thinking skills questions in their next level of schooling. Furthermore, teachers may use the product to conduct the CBT, especially to assess the students' higher thinking skill using the appropriate technology-based standardized assessments.

1.7   Definition of Terms

1.   Designing

Designing is the process of collecting ideas, arranging and implementing them by using certain principles for a specific purpose. In this case, the researcher has designed a CBT of English subject. To design the product, namely HOTS Quiz, the researcher used iSpring Suite 9 as the software. The multiple choice questions were selected from the latest ENE in the academic year 2015/2016 and 2016/ 2017 which were limited into the questions assessing the students' HOTS (especially in reading and writing skills).

2.   Technology-based Media

Since the beginning, education has been influenced by a variety of factors such as social, economic, political and media technology. However, the most influential factor is media technology (Loretta, Green, and Hansen, 2012).

This study produced a digital product which can be accessed using computer, laptop, smart phone, and so on anytime and anywhere the user wants. The HOTS Quiz has been designed by using a software, namely iSpring Suite 9, a

special software to help teacher in designing digital quiz. To finish the quiz, the user does not need internet connection, while to send the quiz result requires a stable internet connection.

3. High Order Thinking Skills (HOTS)

Higher-order thinking can be defined as terms of transfer, terms of critical thinking, and terms of problem solving (Brookhart, 2010). HOTS is a thinking skills that not only requires the ability to remember, but also other higher capabilities include the ability to analyze, evaluate, and create. In Junior High School English exam, the HOTS questions were those which require the students' analyzing, evaluating, and creating level. Therefore, the HOTS Quiz product was designed to habituate the students in solving the HOTS questions.

4. The Ninth Graders

The ninth graders are usually 15-16 years old students who are in the last school year of Junior High School. In this research, the ninth graders became the research participants.