Online test design for computer-based final examination preparation

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Abstract

The objective of this research is to describe the way to design an online test for computer-based final examination preparation for Junior High School Students using Schoology application. The method used in this research is research and development. First, the researcher analyzed graduation competence standards for the 2017 and 2018 National Examinations, English basic competences in 2013 Curriculum, test indicators of 2017 and 2018 National Examinations, and 2017 and 2018 paper-based National Examinations. The result of the analysis was used to determine the skills, the basic competences, and the test indicators for the test blue print of the online test. Based on the test blue prints, the researcher developed the online test in Ms-Words. The developed test instrument was consulted with the researcher's consultants to get the external validity. After the external validity was obtained, the test was uploaded in the Schoology application. The online test in the Schoology was put into a try out to students of Grade IX G and H of SMPN 1 Pengasih. The student's scores in the test try out were analyzed using SPSS Product Moment. The result showed that the students' scores in the test try out coincided with their scores in their end-semester test. This proved that the test is effective to be used. The test items which were not valid were revised through English teacher group discussion in SMPN 1 Pengasih. After being revised, the online test was ready to be used.

Keywords: blue prints, online, schoology, try-out, upload

Introduction

Language testing cannot be apart from the learning and teaching process. It is the instrument to measure the success of the teaching and learning process. Considering the importance of a test in language teaching, the government issues the final examination to standardize the education quality in Indonesia. Recently the national final examinations are conducted through computer-based tests. Therefore, it needs sufficient infra structures and internet connection. Moreover, the students need some practices to face the online tests. Every school has to prepare their students to face the computer-based examinations. With this experience, the students will feel more confidence to face the final examination.

In fact, there are many paper-based tests which can be accessed by the students, but only a few online tests available. The computer-based tests can only be found after the schools or the students buy the online-test application either from a certain learning course or from publishers. The online-test exercises will give students benefit, such as having a chance to practice the tests as well as being familiar with the computer operation related to the tests. Once, some of the students of IX G SMPN 1 Pengasih expressed their feeling towards the computer-based test: "*…we feel nervous, not focused, afraid of making any mistakes because we have not done the computer-based test*". The excerpt showed that the students felt worried and uncertain about the computer-based test due to their inexperience of the test. Therefore they needed some practice on the computer-based test.

Since there were only some limited computer-bases tests available, the researcher wanted to design an online test which can be accessed freely by her students in a junior high school

(SMP) 1 Pengasih. The designed online test was only for the students of Grade IX Pengasih 1 Junior High School in the academic year of 2018/2019 in Kulon Progo regency. The test consists of a set of test items for 2019 final examination preparation based on the 2018 basic competences. It is uploaded through schoology application.

The similar researches about the computer-based test were conducted by Rozanah (2016), Piaw (2012), Fagbola, Adigun, & Oke (2013), Johan et al. (2015), Lestari, Fajaruddin, & Sacko (2008), Wang, Kuo, Chao, & Tsai (2012), and Carpenter and Alloway (2018). Rozanah designed an online test through Quizzegg application in SMK Muhammadiyah 1 Moyudan. Her research finding showed that the student' scores in the online test were better than their scores in the traditional test. Piaw's research which was conducted in Peninsular Malaysia with 140 undergraduate student teachers from a teacher training institute proved that the CBT mode is more stable and consistent in terms of internal and external validity. Moreover, the results indicated that there was a significant treatment effect on testing motivation. The CBT had increased the participants' self-efficacy, intrinsic and social motivation. This coincided with the result of Tamitayo's research. Her research finding showed the effectiveness of computer-based test (CBT) system for university examination. Johan's research finding also supported the use of CBT test. He mentioned that the use of computer-based Summative test software had increased teacher's and student's motivation in testing. Wang (2012), in his research about the development and evaluation of a Computerized Adaptive Testing System also supported the use of CBT in Chinese language proficiency. The one which is different is the result of Carpenter and Alloway's research finding (2018). Their research showed that the student's scores in paper-based test were better than in CBT. The research participants were students of 4 – 11 years. However, they mentioned that this happened due to the developmental working memory differences, increased cognitive workload, test mode effects, and participants' characteristics.

There are three objectives of the study: to describe the ways to design the predicted final examination as an online test using schoology; to describe the effectiveness of the developed alternative test using Schoology for the ninth-grade students of SMPN 1 Pengasih in the academic year of 2018/2019; and to describe the limitation of the developed online-test using Schoology for the ninth-grade students of SMPN 1 Pengasih in the academic year of 2018/2019. The result of the study will give benefits to teachers, students, and other researchers. The teacher will get additional learning source especially an online test to prepare their students facing the final examination. This study will also encourage them to design another similar test to enrich their learning sources. The students get opportunities to practice an online test for UNBK preparation without any expense. Thus, they become familiar with online tests as well as the computer operation system. The other researchers will explore more features in schoology as one of their learning resources.

Literature Review

To measure the success of the teaching process, a teacher needs assessments. This is as what Brown (2004) says that assessment is done by the teacher to measure the extent to which his/her teaching process gains its objectives. In other words, it is conducted to find out how effective the teaching process is. The assessments can be in the form of incidental comments or responses, tests, and journals. Test as one of the assessment is conducted to measure one's knowledge and ability in a certain subject. Moreover, Brown cites that there are 5 criteria of a test, they are: practicality, reliability, validity, authenticity and washback. Douglas (2010) states that reliability concerns the extent to which the tests we give provide accurate measures of whatever abilities they are designed to measure. Brown (2004:20) states that a reliable test is consistent and dependable.

Fulcher and Davidson (2007) 'Validity' in testing and assessment has traditionally been understood to mean discovering whether a test 'measures accurately what it is intended to measure'. In this research, the researcher obtained the validity of the test through two phases. The first one was by consulting the developed instrument with her two consultants: Dr. Imam Ghozali, M.Sc. and Dr. Rr. Hasti Robiasih, M.Pd. The second phase, she analyzed the student's scores in the test try out using SPSs Product Moment. Through this analysis she could find out the valid test items and the non-valid ones.

Brown (2004) notes that there are two major skills in the assessment of reading comprehension. They are micro skills and macro skills. The micro skills are: discriminating among the distinctive graphemes and orthographic patterns of English; retaining chunks of language of different lengths in short-term memory; processing writing at an efficient rate of speed to suit the purpose; recognizing a core of words and interpret word order patterns and their significance; recognizing grammatical word classes (nouns, verbs, etc.), systems (e.g. tense, agreement, pluralization), patterns, rules, and elliptical forms; recognizing that a particular meaning may be expressed in different grammatical forms; recognizing cohesive devices in written discourse and their role in signaling the relationship between and among clauses. Whereas the macro skills are recognizing the rhetoric forms of written discourse and their significance for interpretation; recognizing the communicative functions of written texts, according to form and purpose; inferring context that is not explicit by using background knowledge; from described events, ideas, etc., inferring links and connections between events, deducing causes and effects, and detecting such relations as main idea, supporting idea, new information, given information, generalization, and exemplification; distinguishing between literal and implied meanings; detecting culturally specific references and interpreting them in a context of the appropriate cultural schemata; developing and use a battery of reading strategies, such as scanning, and skimming, detecting discourse makers, guessing the meaning of words, from context, and activating schemata for the interpretation of texts. The researcher used these macro skills as the tested skills in the test items.

Method

The research type used in this study is Educational Research and Development (R & D). Borg and Gall (1983:772) define research and development as a process used to develop and validate educational products. The researcher developed an online test using Schoology application, did the field testing for the test product, and revised it. The research design can be seen in Figure 1.
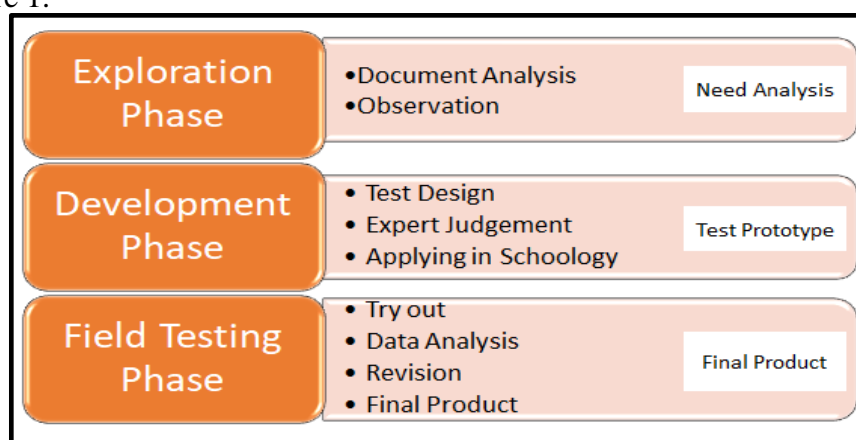

Figure 1. Research Design

The steps in this study consist of three phases: exploration phase, development phase and field testing phase. In this exploration phase, the researcher conducted a document analysis and

observation to find out what the students actually need in the test. The researcher analyzed some documents related to the final examination, such as the syllabus of the 2013 Curriculum, the graduation competence standards of 2017 and 2018 final examinations, and the test indicators found in them. In the 2017 national examination competence standard, the skill tested is the reading skill only. This is shown by the operational verbs of the basic competence tested, for example to identify the social functions of a text, to compare the communicative purpose of a text, to conclude the topic of a text, etc. the detail comparison of the 2017 and 2018 final examination was described in Table 1.

Table 1. Comparison of 2017 and 2018 Final Examination

No.	Basic Competence	Number of Items	Number of Items
1.	To respond the meanings of written descriptive texts (Grade VII)	8	8
2.	To respond the meanings of written functional texts (an invitation, a *greeting card*, short messages, and announcement (including caution and notice) (Grade VIII)	14	18
	To respond the meaings of written recount texts	7	7
	To respond the meanings of written narrative text (a fable)	-	3
3.	Reading: To respond the meanings of a procedure (Grade IX)	4	-
	Reading: To respond the meanings of a narrative (a folk tale)	7	4
	Reading: To respond the meanings of written report texts (a natural phenomenon and an animal)	7	7
	Reading: to respond the meanings of written functional texts (an advertisement)	3	3
	Total Number	**50**	**50**

In the 2017 and 2018 Graduation Competence Standards there are three main materials tested, they are the social functions, the text structure and the language features. The aspects covered in the social function categories are: the topic or problem, the communicative purpose, the social function, the value /message, the role and function of the writer / speaker, the role and function of te reader, and the context of the text (time, place, situation, etc.). The aspects of the text structure comprise the connections of meaning in the text idea, specific argument, steps, descriptions, text structures, the plot and references. In the language feature aspect, there are synonyms, word order, article, pronouns, agreements of number, tenses, grammatical references, conjunctions, and prepositions. of a text. From the point of view of the cognitive levels (referring to Anderson and Krathwohl's taxonomy), in the 2017 and 2018 graduation competence standards, the cognitive levels involved are classified into three main levels, they are knowledge and comprehension (remembering (C1), understanding (C2)), application (applying (C3)), and reasoning (analyzing (C4), evaluating (C5), and creating (C6)).

Besides doing the analysis, the researcher did some observation in class IX G and IX H. the result showed that some of the students felt worried about the computer-based final examination. They felt so because they had never done the computer-based test before. This result proved that the students did really need a practice of doing computer-based test.

In the development phase, the researcher composed test blue print as the guideline in developing the test. She consulted the test to her consultants: Dr. Imam Ghozali, M.Sc. and Dr. Rr. Hasti Robiasih, M.Pd.

The researcher put the test into a try out to her 46 students in SMPN 1 Pengasih in the academic year of 2018/2019. The researcher chose the students to be the research subjects based on the consideration that they would face the Final Examination soon. There are 24 students in class IX G (14 boys and 10 girls), whereas in IX H there are only 22 students (9 boys and 13 girls). Both classes might have different characteristics. Eight students in class IX G actually came from the same class with the students of IX H when they were in the 7th and 8th grades.

The students of six classes from the 8th grade were divided into eight classes in the 9th grade. Therefore the 8 students in class G and class H actually came from the same class. That was VIII F. However, the rest (16 students) in class G came from different class, that was VIII E. Class VIII E and VIII F used to have different background of their cognitive level, based on the placement test conducted in the 7th grade. Based on the result of the placement test, Class VIII F used to be one among two best classes (VIII C and VIII F) in SMP 1 Pengasih.

Data collection in this research was done through document analysis and observations. The analysis was done to determine the students need of the online test. The observation was done to gain information about the students' need of the test. The analysis used some techniques such as check list and comparison. The purpose of this analysis was to obtain the accurate competences to be tested in the online test, as well as to determine the test indicators.

Findings and Discussion

Designing an online test using Schoology application for this thesis was conducted through some stages: the exploration phase; the development phase, and the field testing. In the exploration phase, the researcher analyzed some documents such as the 2017 and 2018 graduation competence standards and some paper-based final examinations. Besides analyzing some documents, the researcher also did class observation. The result showed that most students needed the online test to make them familiar with the test as well as the computer operation. In the development phase, the researcher first composed the test blue print based on the result of the exploration phase. Based on the test blue prints, the researcher developed the online test in the form of Ms. Words. After she finished with the test, she consulted the test with her two consultants, they were Mr. Dr. Imam Gozali, M.Sc. and Mrs. Dr. Rr. Hasti Robiasih, M.Pd. This was done to get the external validity of the test. After the external validity of the test was fulfilled, the researcher uploaded the questions one by one in the Schoology application. First, she logged in it, then clicked the "course" menu – then clicked "create course" menu. There appeared some blank boxes such as shown in Figure 2.
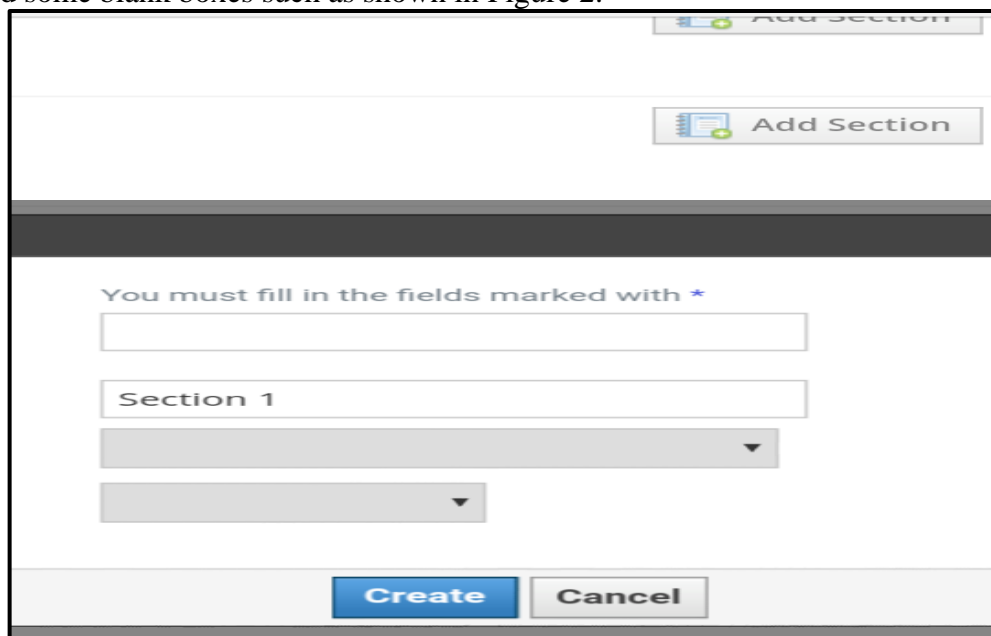

Figure 2. A dialog Box to Create a Course in Schoology

The researcher filled in the blank boxes with the name of the course, what subject and level was the course for. After that she clicked "create". There appeared some menu as shown in Figure 3.
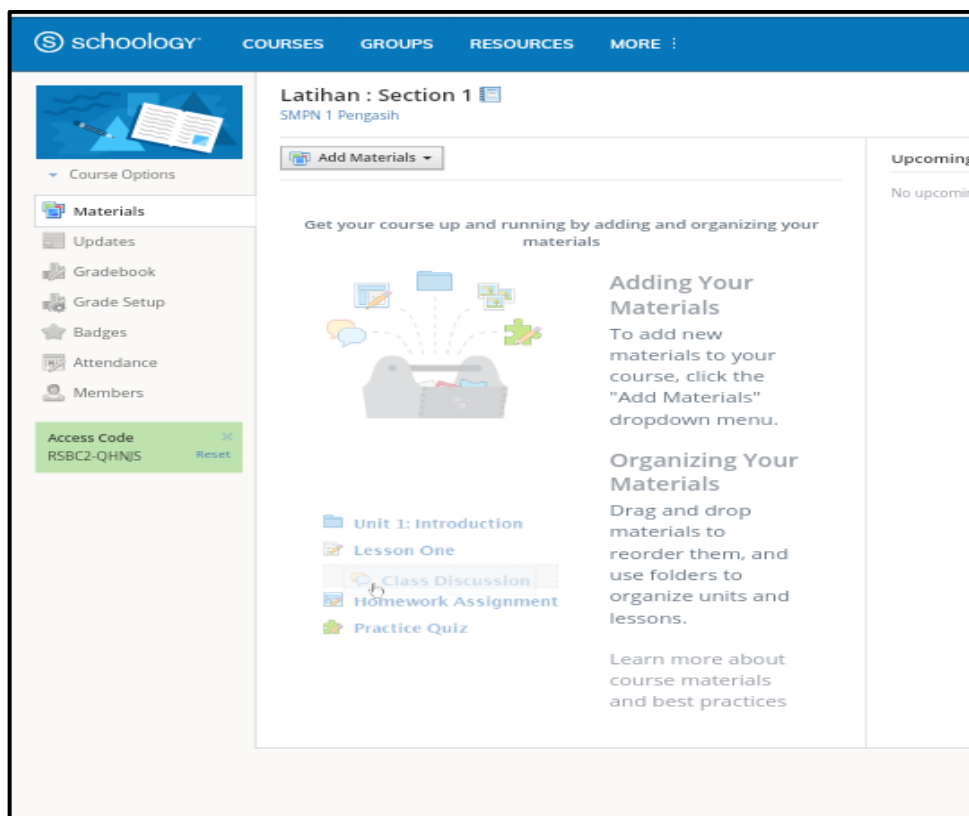
Figure 3. The Menu to Add Test in Schoology

The researcher then clicked "material" – add materials – add test/quiz. There appeared some blank spaces to be filled in with the name of the course, due date, category, scale, and options. After she clicked "create", it would appear a dialog box as shown in Figure 4.
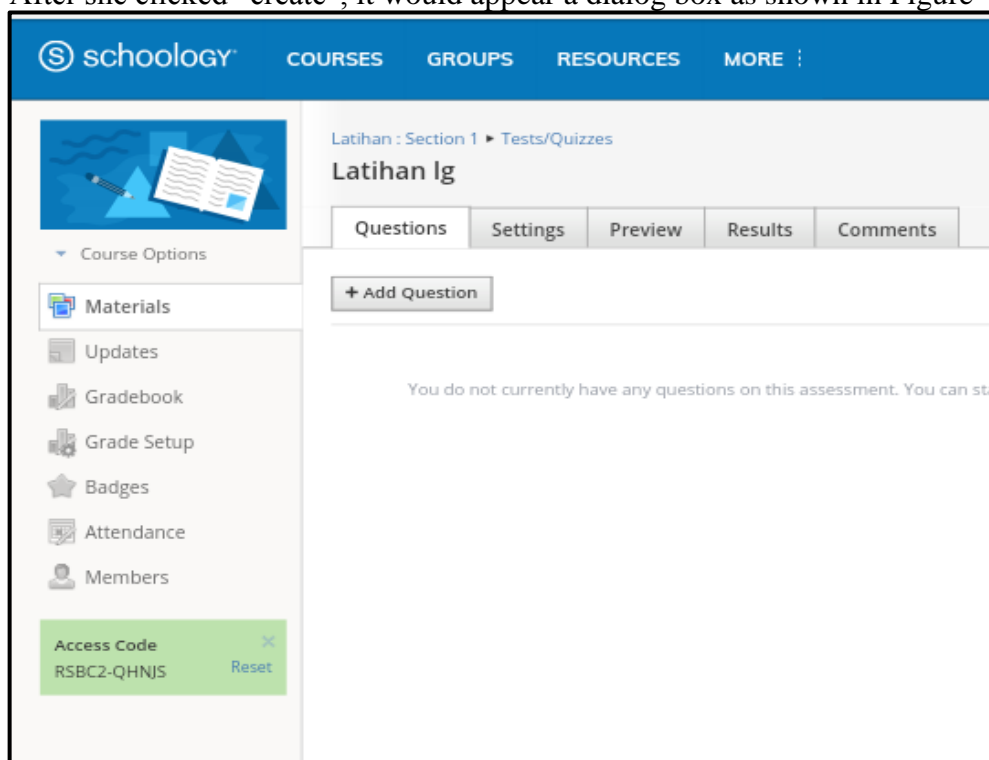

Figure 4. A Blank Page to Write Questions in Schoology

The researcher clicked "add question" and began to upload the test items one by one until all of them were uploaded.

The field testing was conducted successfully and the students' scores were analyzed to get the test validity. Some test items were revised through group discussion of English teacher in the school. Based on the discussion, the test was revised to get the final product. The result of the test try out is shown in Figure 5.
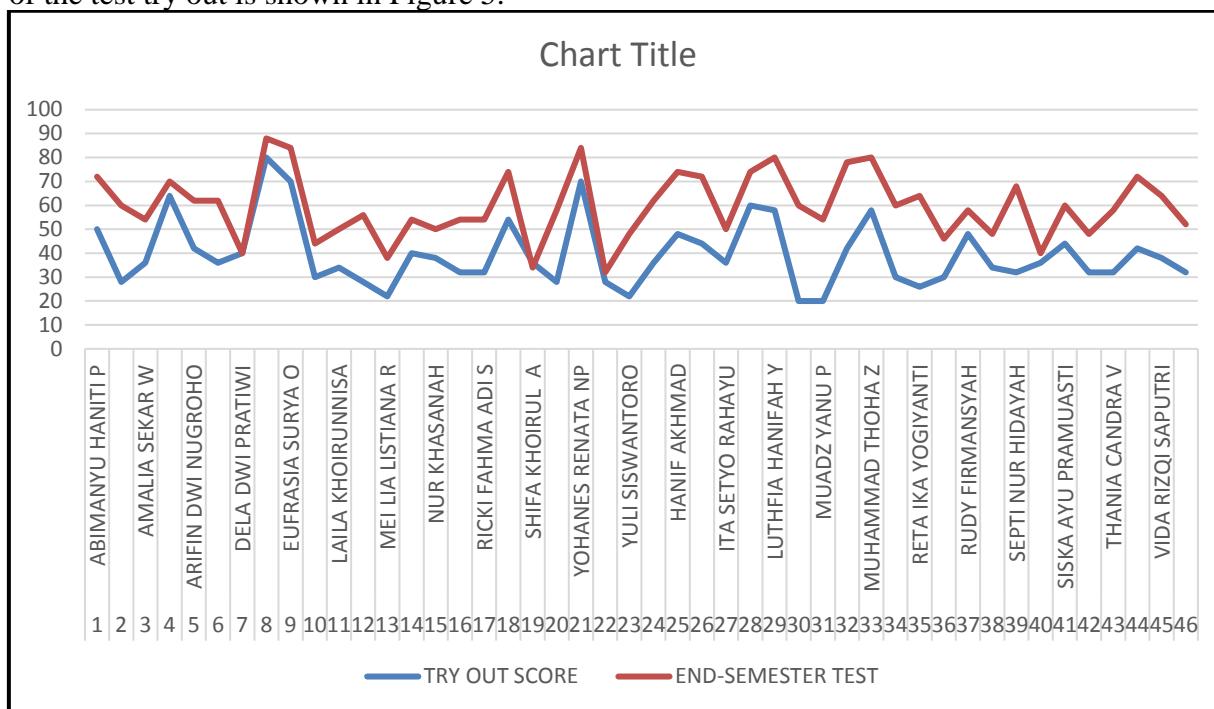

Figure 5. Students' Scores in the Field Testing and End of Semester Test

The students with high scores in the end of semester test tend to get high scores in the test try out. Based on this, it can be inferred that the test is effective in measuring the students' English competences since it can differentiate the students with higher scores from the lower ones. The test is effective enough if it is used as a test for preparing students to face the final examination. The test was designed through some careful study about the graduation competence standards, the basic competences and the test indicators found in the previous final examinations. The researcher needed a lot of time to prepare the test.

Although the students' scores in the test try out are low, they coincide with the students' achievement in their end-semester test. This proves that the test is effective for measuring their English competences. It can differentiate the students with high competences from those with lower ones. Moreover, the result of the interviews with the students after the test try out shows that most of the students feel happy and satisfied with the test. This supports the effectiveness of the test.

Conclusion

Based on the discussion in the previous chapters, it can be concluded that: designing an online test using schoology application is done through the exploration phase, the development phase, and the field testing phase. The online test for computer-based final examination preparation using schoology is effective enough for the students. The test is effective to measure the students' English competences. It also enables the students to experience how to do the test online. The experience brings about their selves' confidences in doing the test using computers. Besides, it also causes them to become familiar with the computer operation as well as the test itself.

Designing an online test needs efforts from the researcher. It is suggested that the designing of the test is done through a group discussion. Each person has a certain task which supports the process of designing the test. This will lessen the efforts. There will also be obtained many designed tests.

The result of the try out done by the researcher is not good enough. This is due to the students' lack of knowledge about the test materials. They have not got all the materials tested. Due to this fact, it is suggested to other researchers to compose another test and try it out in the end of the academic year (around March – early April for the ninth graders) so that the students have already got all the materials they should master.

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