Developing a Mobile Reading Comprehension Test for Junior High School Students by Using *Ispring-Suite*

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ABSTRACT

Online assessment has been largely used by EFL teachers in assessing students' reading comprehension skills. However, since not all schools are equipped with a good internet connection, a mobile test can be a solution. This paper aims to develop a mobile reading comprehension test for junior high school students by using iSpring-Suite. This mobile reading comprehension test can be used in online and offline settings. This paper employed a Research and Development (R&D) method which includes some stages, namely: Planning, Designing, and Development. The stages of test development were also designed using a criterion of the good test, such as practicality, validity, and reliability. The pilot testing was conducted in SMP N 1 Mauponggo Satap and twenty-four grade 8 students took the test. The teachers can directly set answer key and take the students' score in using iSpring-Suite, so it was practical and effective to use. The validity score for all question items was between 0.6 and 0.8 which means that the items are in good categories or valid. Meanwhile, the realibility test result showed that the test items have a very high reliability with the Cronbarch Alpha value 0.613 or more than 0.6 which indicated that the items were reliable. It can be concluded that this mobile reading comprehension test has a high possibility to use. Due to its limitation, the next researcher can design the test with a larger scale with more participants to gain more valid and reliable result.

Keywords: Assessment, iSpring Suite, mobile test, reading comprehension

Introduction

Post-pandemic situation leads to the integration of technology in the education context. Technology plays an important role in supporting students' 21st century skills. Therefore, online learning or e-learning should be applied in the teaching and learning process. The implementation of e-learning requires the students and the teacher to utilize mobile phones, laptops, computers, or tablets with an internet connection. E-learning by using technology can enhance students' engagement and motivation. Additionally, Taiyeb et al. (2017) stated that there are several benefits of e-learning and one of them is that the learning can be done anytime without the limitation of time.

The use of technology has also been applied in assessing students' skills. In Indonesia's context, the Ministry of Education, Culture, Research, and Technology has launched a new policy named a Minimum Competency Assessment (AKM) for the replacement of the National Examination (UN) started in 2021. This assessment is intended for some students (primary students in grade 5, lower secondary students in grade 8, and higher secondary and vocational students in grade 11). This assessment is a computer-based test that is used by the government to evaluate the learning process and outcome of education in Indonesia. It consists of two kinds of test; literacy and numeracy test. Literacy test is used to evaluate students' skill in understanding the passage. There are some types of questions in AKM. Those are multiple choice items, multiple

responses (checklist), matching, short answer, and essay. This kind of test can be adopted by teachers in Indonesia to assess students' competence in any subject, including in English language teaching.

Reading comprehension

In the EFL context, the utilization of online assessment has been implemented in assessing students' skills, including reading comprehension skills. Reading comprehension can be regarded as a crucial skill since it requires identifying and understanding the important ideas of the texts and making inferences based on both texts and background knowledge. Oakley (2011) stated that reading comprehension can be defined as a skill that combines background knowledge and reading texts. According to Koda (2005), there are five indicators of reading comprehension the students should understand to comprehend a text well, such as determining the main idea, finding specific information, making inferences, identifying references, and understanding the meaning of words or detailed information. These indicators are regarded as difficulties that the students encounter in comprehending the text.

Mobile reading comprehension test

In developing a reading comprehension test, several principles of assessment proposed by Brown and Abeywickrama (2010) such as practicality, validity, and reliability should be applied. First, to achieve practicality, the test should be practical. In terms of scoring, this test is easy to check and score. Concerning the administering the test, the test instrument should be easy to administer. Second, the test should have good validity. Brown and Abeywickrama (2010) defined validity into content-related evidence, criterion-related evidence, construct-related evidence, consequential validity, and face validity. In this project, content validity is applied. It discusses the content of the test. The test should cover the curriculum content. It can be determined by expert judgment. Next, the test should have good reliability that can be obtained if the test is consistent and dependable. Brown and Abeywickrama (2010) divided reliability into student-related reliability, rater reliability, test administration reliability, and test reliability.

Some previous studies have revealed that the use of technology has been adopted in testing students' reading comprehension skills. Hidayat et al. (2022) found that there are three types of applications used by EFL teachers in designing reading comprehension tests. Those are Google Forms, Canva, and WhatsApp. A similar study has been conducted by Nadeak and Rika (2022) which revealed that Google Forms also can be used in designing reading comprehension quizzes on descriptive text. According to Fitriani (2021), Google Form is a feature on the Google platform that enables the creation of surveys, questions, and replies using customizable online form components. Therefore, by utilizing Google Forms, the teacher may receive immediate responses from students. Besides Google Forms, Kahoot is also an application that can be used in designing online reading tests. Kurnia et al. (2020) explained that designing e-quizzes for reading narrative text using Kahoot improved students' engagement. From the explanation above, it can be concluded that online assessment benefits in administering the test and improves students' engagement. However, since not all schools are equipped with a good internet connection, the online assessment cannot be applied. In addition, online assessment also can lead to cheating. Teachers need to design a reading comprehension test that can be used not only in online settings but also in offline settings. Therefore, a mobile reading comprehension test can be a solution.

iSpring suite application

One of the applications that can be used by the teachers in designing a mobile reading test is iSpring-Suite. This software is beneficial to make some questions or quizzes for assessing students' skills that can be conducted in online or offline settings. According to Fitriati and Megawati (2021), iSpring-Suite can be an alternative way of assessing students' reading comprehension ability. By using this media, teachers can easily take students' scores and save

their time (Taiyeb et al., 2017). There are some types of questions provided in iSpring-Suite, such as true-false, matching, multiple choice, checklist, short answer, essay, and so on. In designing question items, teachers can attach images or audio (Wardhono et al., 2019). Thus, it also can improve teachers' creativity as well as students' interest. By using iSpring-Suite, teachers can set the timer for students to answer the questions as well as shuffle the number of questions and choices. These tips are beneficial for teachers to prevent students from cheating.

Based on the explanation above, this study is conducted to develop a mobile reading comprehension test for junior high school students in grade 8 by using iSpring-Suite. By developing this assessment instrument, EFL teachers can assess students' reading comprehension ability easily as well as promote students' competence in using technology.

Methods

This study employed a Research and Development (R&D) method by adapting Alessi and Trollip's (2001) model which includes some stages, namely: Planning, Designing, and Development. The planning stage includes the identification of students' basic competence to formulate test indicators. In the designing stage, the blueprint of the test items was developed referring to the students' basic competence. Meanwhile, in the development stage, the test items which have been validated were exported to iSpring-Suite application by adapting AKM-based question types, such as multiple-choice items, multiple responses (checklist), and short answer tasks. The stages of the test development are presented on the following Figure 1.
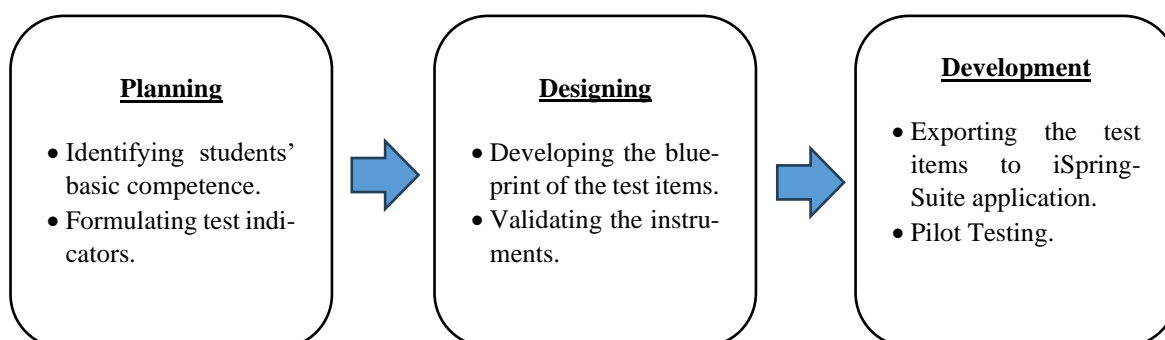

Figure 1. Research and development model adapted from Alessi and Trollip (2001, p. 410)

The test items were validated using content validity by four experts in English Language Teaching and Assessment using a rating scale. They were given a blueprint of the test items which included multiple-choice items, multiple responses, and short answer questions. The experts rated from 1 to 5 for each number of the questions. They evaluated the correlation of the indicator and the test item with the student's basic competence in the current syllabus. The validation result from the experts was calculated using the Aiken V formula and analyzed using the validity index. The validity could be found by the classification of the validity index as follows.

Table 1. Validity index

Amount of Validity	Interpretation
$0.8 < V \leq 1.00$	Excellent
$0.6 < V \leq 0.8$	Good
$0.4 < V \leq 0.6$	Satisfactory
$0.2 < V \leq 0.4$	Poor
$0.0 < V \leq 0.2$	Very Poor

The pilot testing was conducted in SMPN 1 Mauponggo Satap with twenty-four grade 8 students as the participants. They were divided into two groups to take the test online and offline. After conducting the tryout, the student's score from the pilot testing was analyzed using SPSS to measure the reliability by using the Cronbarch Alpha value. The level of reliability was determined based on the reliability coefficient category using Drummond and Jones' (2010) categorization.

Results and Discussion
Test development
There are three stages in developing this mobile reading comprehension test. The first stage is designing. In this stage, the indicator of reading comprehension assessment referring to the students' basic competence was formulated. This stage is important as it assists the developer in formulating the indicators of the test. Since this project is focusing on grade 8 students, the basic competence is adapted from the current curriculum and it is stated as follows:

Table 2. Basic competence for grade 8 Semester 1

Basic Competence	Text Type
3.5 Comparing the social function, text structure, and linguistic features of several special texts in the form of greeting cards, by giving and asking for information related to special days, according to the context of their use.	**Greeting Card**
3.11 Comparing the social function, text structure, and linguistic features of several oral and written personal recount texts by giving and asking for information related to personal experiences in the past, short and simple, according to the context of their use	**Recount Text**

From the table above, it can be inferred that two types of text will be tested in this test according to the students' basic competence; Functional Text (Greeting Card) and Recount Text. The next stage in developing this test is designing the blueprint of the test items. This stage focuses on determining the indicators of the test derived from the students' basic competence (*Appendix 1*). After reviewing the syllabus and the basic competence for grade 8 students, the researcher formulates the objective of the test. The objective of the test is further used to elaborate the indicators of tests. There are five indicators for the questions on the mobile reading comprehension test, such as students can determine the main idea of the text, identify supporting ideas of the text, identifying the meaning of vocabulary, make inferences, and identify references. This stage also includes content validity from the experts.

The last step is developing the test item. In this stage, the test items that have been validated by the experts were exported to the iSpring-Suite application. The type of questions used by the writer were adapted from AKM-based tests, such as multiple-choice items, multiple responses (checklist), and short answer tasks. These types of questions were chosen due to the practicality of the test. These types of questions help the teacher score and grade the students easier. Additionally, the iSpring-Suite application provided templates of different types of questions, so we could just choose the template and complete the questions as well as the key answer. There are 30 questions in this test and the students can take the test for 90 minutes. The test can be used in an offline setting which the students can directly click on the test file and operate it using html file. Students do not need an internet connection, but the teacher needs to monitor while the students are working on the test. The result of the test will be displayed after the students click the "submit" button. Meanwhile, to operate the test in an online setting, the students were given a

link that was directly to the test. In an online setting, the teacher does not need to monitor the student's progress since the result of their test will be sent to the email address registered on the test. The teacher can receive the report of students' progress right after the students submit their work. The display of the test can be seen in the Figure 2.
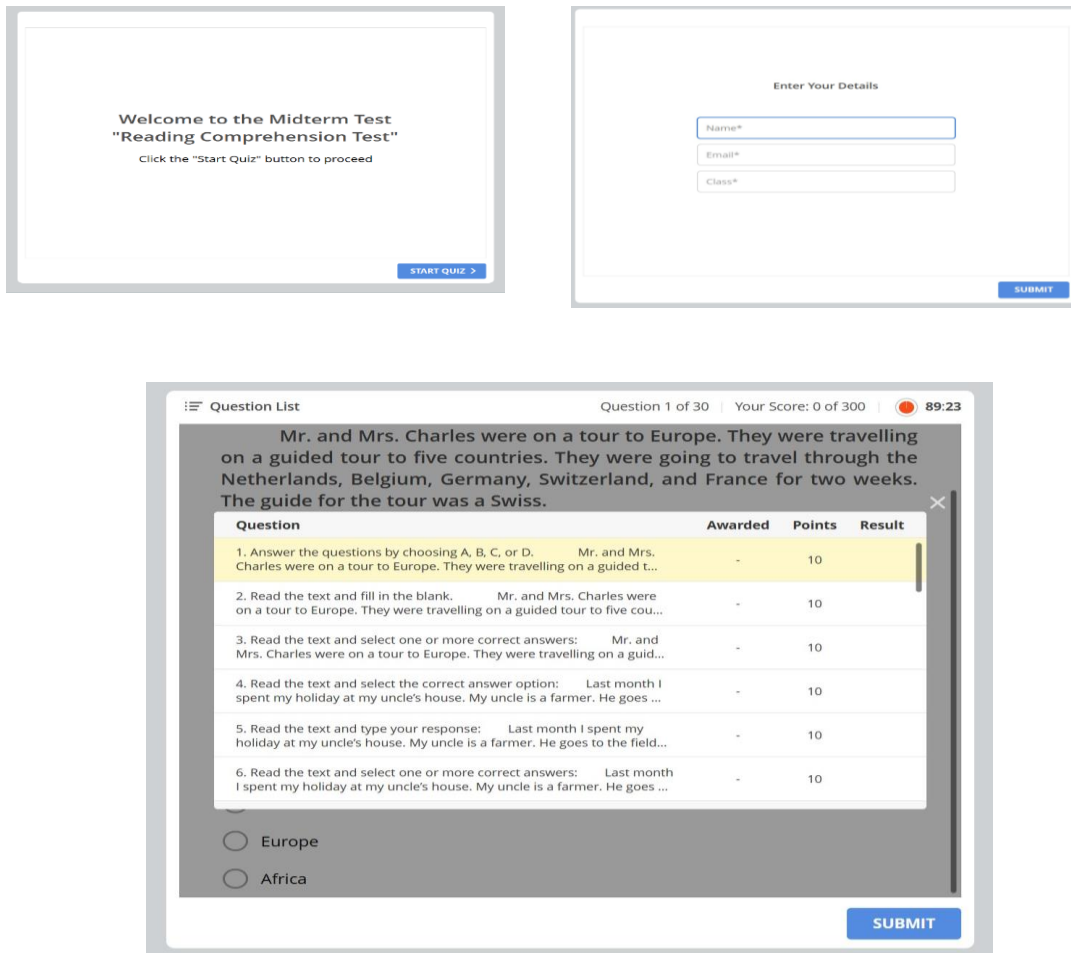

Figure 2. Mobile reading comprehension test by using Ispring suite

Validation score

Before conducting the pilot testing, the instrument of question item analysis was validated by four experts. The validity test was run using the Aiken V formula. The test was divided into three types of questions; multiple choice, multiple responses, and short answer tasks. The validity result from the experts is explained in Table 3.

Table 3. Validity result for multiple-choice item

Amount of Validity	Item Number	Interpretation
0.6 <V≤ 0.8	1, 4, 7, 9, 12, 13, 17, 19, 21, 22, 23, 25, 26, 28, 29	Good

Table 3 showed that multiple choice items with item number 1, 4, 7, 9, 12, 13, 17, 19, 21, 22, 23, 25, 26, 28, 29 were in good categories. It indicated that all the questions in multiple choice items were correlated with the indicators and the students' basic competence.

Table 4. Validity result for multiple response item

Amount of Validity	Item Number	Interpretation
0.6 <V≤ 0.8	3, 6, 16, 18, 20	Good

The multiple response items with item numbers 3, 6, 16, 18, and 20 were also in good categories which means that the items were in line with the indicators referring to the syllabus and students' basic competence. Meanwhile, the validation results for the short answer task items were also between 0.6 and 0.8 with "good" interpretation. The result of the validation can be seen in the following Table 5.

Table 5. Validity result for short answer task item

Amount of Validity	Item Number	Interpretation
0.6 <V≤ 0.8	2, 5, 8, 10, 11, 14, 15, 24, 27, 30	Good

From the validity result above, it can be seen that all the items from the three types of questions were between 0.6 and 0.8 scores. It means that they were in "good" categories or it can be concluded that the test items were valid and applicable for the next stage.

Pilot testing result

The pilot testing was done in offline and online settings for grade 8 students in SMPN 1 Mauponggo Satap. Twelve students who took offline tests need to be monitored by the teacher since the result of the test would be displayed after they click the "submit" button. Meanwhile, the other twelve students took the online one, so they need to have a good internet connection and the result of the test would be sent to the teacher's email. The tryout result from 24 students was then input into Microsoft Excel to be analyzed using SPSS to measure the reliability by using the Cronbarch Alpha value. The level of reliability was determined based on the reliability coefficient category using Drummond and Jones' (2010) categorization. The result shows that the test items have very high reliability with the Cronbarch Alpha 0.613 or more than 0.6 which indicated that the items were reliable. The result of the reliability test can be seen in the following Table 6.

Table 6. Reliability statistics

Cronbarch Alpha	N of Items
0.613	30

This study aimed to develop a mobile reading comprehension test for Junior High School students by using iSpring-Suite. In developing a reading comprehension test, an investigation or identification of the students' basic competence is important. Based on the syllabus of the current curriculum for students in grade 8, it is stated that the materials for reading comprehension were focused on two texts, a greeting card and a recount text. This mobile reading comprehension test was designed to assess several students' micro-reading skills, such as determining the main idea of the text, identifying supporting ideas of the text, identifying the meaning of vocabulary, making inferences, and identifying references (Koda, 2005). The question items were designed by adapting materials from textbooks and the internet.

From the result of the study, it can be seen that this mobile reading comprehension test has fulfilled the criteria of a good test proposed by Brown and Abeywickrama (2010). This test was practical and an effective method for students' assessment as Fitriati and Megawati (2021) stated that *Ispring* suite can be an alternative way of assessing students' reading comprehension ability. Additionally, by using Ispring Suite, teachers could directly take students' scores since they could set key answers and score on the application. It is in line with a study conducted by Taiyeb et al

(2017) which explained that by utilizing Ispring Suite, teachers could easily take students' scores and save time.

Moreover, based on the validity and reliability of test results, this mobile reading comprehension test was valid. This test used content validity by using three types of questions, adapted from an AKM-based test, namely multiple choice, multiple responses (checklist), and short answer tasks. The validation was given by the experts and indicated that all the question types and items were in "good" categories which means that the test items were valid. The questions were correlated to the syllabus and the curriculum content. Meanwhile, the reliability test result, it indicated that the items are reliable since the Cronbarch Alpha value was higher than 0.6. This indication means that this test has a strong possibility to be used Brown and Abeywickrama (2010) stated that in developing a reading comprehension test, some principles, such as practicality, validity, and reliability should be applied.

Conclusion

From the result of the study, it can be concluded that there are several procedures for developing a mobile reading comprehension test for Junior High School students by using iSpring-Suite. The stages of test development included the identification of indicators referring to students' basic competence, followed by designing the blueprint of the test and exporting the test items into the application. This test consisted of 30 questions which are in the form AKM-based test, such as multiple-choice items, multiple responses (checklist), and short answer tasks. Students can take the test for 90 minutes in an online or offline setting. This test can be used to assess students' reading comprehension skills since the test items were valid and reliable. It is easier to take students' scores by setting the answer key on the application, so it is also practical and effective to use. Since the study was conducted on a small scale, the next researcher can design the test on a larger scale with more participants to gain more valid and reliable results.

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APPENDIX
Blueprint of the test

Indicator	Question Number
Determining the main idea	7, 9, 16, 18, 19, 22, 24
Identifying supporting details	1, 2, 3, 6, 10, 11, 14, 30
Identifying the meaning of vocabulary	13, 21, 23
Making inferences	4, 12, 17, 20, 25, 27, 28, 29
Identifying references	5, 15, 18, 24

Question Number	Type of Question
1, 4, 7, 9, 12, 13, 17, 19, 21, 22, 23, 25, 26, 28, 29	Multiple-choice item
3, 6, 16, 18, 20	Multiple responses (checklist)
2, 5, 8, 10, 11, 14, 15, 24, 27, 30	Short answer task