Creating Reading Comprehension Computer Based Test (CBT) as The Graduation Requirement of Vocational College Students

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Abstract. Vocational College of Diponegoro University required the students to have a specific English test as their graduation requirement. This study aims to create the English test in the form of CBT for Vocational College students as their graduation requirement. One of the test components is reading comprehension test. This reading comprehension test consist of 5 passages which include 9 questions in every passages. The passages consist of business email, inquiry email, newsletter, complain letter, response to complain letter, resignation letter, job vacancy, promotional poster for events, promotional materials, regulation, job contract, company rules, and work ethic. The question in each passages include identifying main idea, objective, explicit information, implicit information, reference, word meaning based on context and cohesive device. The method used in this study is research and development method using ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model as the research procedures. The result of this study is the reading comprehension computer-based test (CBT) system which consists of 5 different functional pages namely the student login page, student question page, package upload, passage and question upload and student result page.

Keywords: Reading Comprehension, CBT, Vocational College Students

1 Introduction

English as an international language has been needed and spoken by people in the world. Nowadays, English becomes the most important language to learn because it is the common language used in international communication. English consists of four languages skill namely reading, writing, listening, and speaking. Reading ability is viewed as an essential skill for students of English as a foreign language (EFL) [14]. Among the four language skills

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(i.e., listening, speaking, reading, and writing) reading is likely to be the most attainable skill for EFL students. Reading is the most important skill needed for EFL/ESL learners. Reading involves word recognition and comprehension [1]. Reading comprehension is concerned with one’s thinking and understanding of the text. One’s reading comprehension is affected by his or her prior experience and knowledge [3].

[6] described reading comprehension as the process through which readers become aware of a concept, understand it considering their prior experiential knowledge, and interpret it considering their own wants and goals. It may be argued that comprehension and reading go hand in hand. One must comprehend the text considering their needs and goals in order to understand and interpret the written symbols. Additionally, reading comprehension is the capacity to comprehend information in a text and effectively interpret it. A test can be used to gauge students’ reading comprehension.

A portion of assessment is a test [4]. An achievement test is one of the tests that a lecturer almost likely needs to create. Achievement assessments come in two flavours: formative and summative [4]. The purpose of a formative test is to gauge how well students have understood the learning objectives of a relatively brief unit or section of instruction, such a textbook chapter [7]. A summative test, often referred to as summative assessment, is typically given at the conclusion of a course or instructional unit with the goal of measuring or summarizing what students have [4]. A summative test is frequently used by classroom lecturers to determine whether their students have mastered the material. As a result, the issue with the reading summative test should receive more attention because it is vital to know what the students have understood.

The education in Indonesia is also capable to face 4.0 revolution challenges. One of the important things that should be done is to connect between education and the development technology development. In the previous couple decades, computer use in education has grown significantly. From class presentation to student assessment, computers are used in education. According to [13], CBT is the solution to quicker and less expensive test delivery for assessments. Computers are now commonly used as assessment tools in education thanks to their nearly error-free high speed data processing capabilities [2]. Paper and pencil testing was no longer used since it was considered out of date. In order to save, access, and process the test, we must begin using computers [10]. This evaluation is referred to as a computer-based test (CBT). According to [11], CBT is an effective way to influence how education is evaluated.

CBT has many benefits; it makes CBT getting noticed and become interested to use in evaluation and education in the world especially Indonesia. The interest in developing and using computer-based test (CBT) in assessment in schools and higher education has improved in recent years. CBT considered as the effective and up to date way of giving an assessment [12]. The advantages included the possibility to give students quick feedback on their performance as well as the automation of marking and resultant reduction in the workload associated with marking. The usage of CBT is an effort to get beyond these drawbacks and make course and evaluation processes more engaging and beneficial for both teachers and students [8]. The effectiveness and profitability of academic institutions can be increased by the application of CBT. It lowers the expense of supplies and labor associated with conducting exams by hand. The test questions for this work could be made more interesting by including sorts of questions like theory-based and diagrammatic questions [9].
Vocational College of Diponegoro University required the students to have a specific English test as their graduation requirement. This study aims to create the English test in the form of CBT for Vocational College students as their graduation requirement. One of the test components is reading comprehension test. This reading comprehension test consist of 5 passages which include 9 questions in every passages. The passages consist of business email, inquiry email, newsletter, complain letter, response to complain letter, resignation letter, job vacancy, promotional poster for events, promotional materials, regulation, job contract, company rules, and work ethic. The question in each passages include identifying main idea, objective, explicit information, implicit information, reference, word meaning based on context and cohesive device.

2 Methods

The research methodology used in this study is presented in this chapter. This study is classified into Educational Research and Development (R&D) which aims to develop a product that can be effectively used in educational programs [5]. The research procedure used in this study is ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model to develop the test materials. The steps implemented through the ADDIE model included analyzing, designing, developing, implementing, and evaluating.

The researcher initially defined the educational objectives before doing a needs analysis to determine what the students' needs were. In the second step, specific or performance targets were defined using the findings from the needs analysis to prepare the instruction's media, methods, and content. During the development stage, the researcher chose the topic for the syllabus and material drafts before being ready for an assessment or expert opinion. The document was tested out in the teaching and learning process in the fourth step and reviewed in order to make any necessary modifications. The researcher used a summative evaluation to assess the outcome. The following diagram illustrates the development process.

![Fig. 1. ADDIE Development Model](https://doi.org/10.1051/e3sconf/202344802045)
3 Result

The reading comprehension computer-based test (CBT) system consists of 5 different functional pages namely the student login page, student question page, package upload, passage and question upload and student result page.

3.1 The Student Login Page

The login page allows a user to gain access to an application by entering their username and password. The students should register first through completing their identity such as name, email, study program, etc. before they obtain a username and password for login. The screen display of login page is appeared in Figure 1. After the students start login, they should choose testing schedule that include the date and time of the test.

![Fig. 1. Students Login Page](image)

3.2 The Student Question Page

The page is used to serve the questions of the examination to the student. There are four passages that consist of nine questions in each passage. The passages consist of business email, inquiry email, newsletter, complain letter, response to complain letter, resignation letter, job vacancy, promotional poster for events, promotional materials, regulation, job contract, company rules, and work ethic. The question in each passages include identifying main idea, objective, explicit information, implicit information, reference, word meaning based on context and cohesive device. The screen display of student question page is appeared in Figure 2.
3.3 Package Upload Page

The page facilitates the lecturer in submitting the packages which consist of four passages that includes nine questions in each passage. The readability level of each passage is different starting from 11 until 13. In the beginning of creating the reading comprehension computer-based test, the teachers make 2 packages which consist of 45 questions in every package. The screen display of package upload page is appeared in Figure 3.

3.4 Passage and Question Upload

The page facilitates the lecturer in submitting the passages and questions. The arrangement of the passages is based on their readability level, for example the passage with readability
level is 11 will be the first passage that followed by question number 1 – 9, and so on. The lecturer also should specify the answer to the question while inputting the question into database. There are four choices for each question. The screen display of passage and question upload page is appeared in Figure 4.

![Passage and Question Upload Page](image)

**Fig. 4. Passage and Question Upload Page**

### 3.5 Student Result Page

The student result page is presented the result of the students examination. It will display the students’ name, students’ number, students’ department, students’ score, and students’ grade. The screen display of student result page is appeared in Figure 5.

![Student Result Page](image)

**Fig. 5. Student Result Page**
References