



## THE DEVELOPMENT OF E-TEFL (EEPIS TEST OF ENGLISH AS A FOREIGN LANGUAGE) WITH WEB AND ANDROID-BASED SIMULATION AT POLITEKNIK ELEKTRONIKA NEGERI SURABAYA

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**Abstract :** English is one of the essential factors to gain access to global information and knowledge of science and technology. The rapid expansion of technological education and knowledge in developing countries, such as Indonesia, calls for the need into foreign language proficiency, especially English to meet the demand of global market. Seeing the current challenges of global competition, many higher education institutions set the graduation requirements by assigning the students to follow TOEFL (Test of English as a Foreign Language) in order to measure and determine the capability or proficiency in English-speaking graduates. Considering TOEFL as one of the most ideal test in assessing English skill, this study aims to generate product in the form of E-TEFL (EEPIS Test of English as a Foreign Language) which is established as an evaluation tool to meet the academic needs in Electronic Engineering Polytechnic Institute of Surabaya (PENS). Research and development (R&D) is a method used in this study. The study was conducted through several stages namely (1) need analysis, (2) System design, (3) E-TEFL development, (4) expert validation (lecturers) and first revision, (5) try-out, (6) final revision. The use of technology in developing E-TEFL application is expected to give another alternative in learning TOEFL and E-TEFL can be used as an ideal assessment tool for proving students' language proficiency as graduation requirement.

**Abstrak :** Bahasa Inggris adalah salah satu faktor penting dalam meraih informasi, pengetahuan an teknologi. perkembangan yrknolgi pendidikan dan ilmu pengetahuan yang cepat di negara berkembang seperti Indonesia, kemampuan bahasa asing, khususnya bahasa Inggris sangat dibutuhkan untuk bisa memenuhi kebutuhan pasar global. Melihat tantangan ini, banyak lembaga pendidikan tinggi menerapkan TOEFL sebagai salah satu syarat kelulusan mahasiswanya. Mengingat TOEFL merupakan salah satu tes yang paling ideal dalam mengukur kemampuan bahasa Inggris, studi ini bertujuan untuk menghasilkan sebuah produk yang berbentuk E-TEFL (EEPIS Test of English as a Foreign Language) yang digunakan sebagai alat evaluasi untuk memenuhi tuntutan akademik. Studi ini menggunakan metode Research and Development melalui beberapa tahapan yaitu, analisa, desain, pengembangan, validasi, revisi, uji coba, dan revisi akhir. Penggunaan teknologi dalam pengembangan apilkasi E-TEFL ini diharapkan bisa digunakan sebagai alat pengukuran kemampuan bahasa Inggris mahasiswa yang ideal.

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**Keywords:** English, E-TEFL application, research and development

Diterima : 21 Mei 2018

Disetujui : 08 Juni 2018

Diterbitkan : 30 Juni 2018

DOI : <https://doi.org/10.31102/wacanadidaktika.6.01.7-14>

### INTRODUCTION

Language plays a vital role in human life because it enables us to

communicate in everyday life, academic environment and business. It becomes a tool for communications

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**How to cited:**

Sumarsono, I., Kusumawati, E., & Nurisma, R. (2018). The Development Of E-Tefl (Eepis Test Of English As A Foreign Language) With Web And Android-Based Simulation At Politeknik Elektronika Negeri Surabaya. *Wacana Didaktika*, 6(01), 7-14. <https://doi.org/10.31102/wacanadidaktika.6.01.7-14>

among people in the world. As we know, English has been one of the most widely spoken languages in the world. It means that English Foreign Language (EFL) learners are expected to master English skills consisting productive skills (speaking and writing) and receptive skills (speaking and listening).

Regarding the need into foreign language proficiency, it is important to have the standard test to measure students' English proficiency. TOEFL has been one of the most ideal academic English-language assessments in academic success and it becomes one of the requirements for graduation in Politeknik Elektronika Negeri Surabaya (PENS). As one of the graduation requirements, the higher education institution needs to ensure that the students' English language skills are up to the level demanded by institution. Thus, the students should fulfill the language requirements by applying TOEFL as the commonly accepted test. The students need to achieve at least 450 as requirement.

Considering the different language competencies among the

students, the language requirement has often become an obstacle. Some of them should take intensive program in TOEFL preparation prior to the test and some others apply the test several times until they reach the required minimum score. However, the language test failures are likely getting higher due to the lack of students' preparation in test.

Therefore, E-TEFL (EEPIS Test of English as a Foreign Language) is developed to assist the students to be familiar with TOEFL and establish the students' autonomous learning to learn independently outside the class. E-TEFL is an English language test used in Politeknik Elektronika Negeri Surabaya (PENS) in which the test item will be constructed by English lecturers in PENS and the items will be adjusted to Indonesian local content and tailored do Engineering field of study.

The material tested in E-TEFL is not different from TOEFL. E-TEFL test has three sections namely listening, structure and reading. For the test items in listening section, the native speakers' speech will be recorded in both short and long

conversations in English. Meanwhile, in structure and reading section, the test items will be adjusted to Indonesian culture. With the development of E-TEFL which is almost equal to TOEFL, it is expected that the test can be administered with affordable price and most importantly students can have frequent practice on their own.

E-TEFL test is a computer-based test featuring the same question types as the paper-based version. The availability of E-TEFL application in android also enables the students to have frequent practice outside the class to fulfill their language needs. E-TEFL measures English language proficiency in the following areas: listening, structure and reading. A set of trials, designed especially for the students, was developed to teach the skills needed to take the test on computer. E-TEFL is expected to give an ease for the test takers and administrator. There are several advantages to take the computer-based test, such as convenient schedule and efficiency, comfortable testing environment, questions that are tailored to the field of study,

immediate viewing of scores. In addition, to avoid the leak in test, the database will be developed and the questions on each section will be randomized. The different types of questions for each test taker will be distributed to avoid test fraud among the participants.

In conclusion, by considering the need into ideal test for evaluating English language proficiency, the researchers conducted a study using Research and Development (R&D).

In this study, E-TEFL will be developed with web and android-based simulation not only to meet the demands of students' language needs, but also based on the fact that some experts have proven the advantageous of the web based learning such as time saving, cost reduction, and space saving. Moreover it has been predicted that in the next decade, there will be more than 50% of the students on the world who will use the technology of web based learning (Chang & Chang, 2007).

### **Theoretical Basis**

#### **TOEFL Test**

The Test of English as a Foreign Language (TOEFL) is an exam that

determines whether a student whose native language is not English has strong enough English skills to succeed in courses at a college or university in the United States or Canada. The test, which is administered by an agency called the Educational Testing Service, contains four parts: Listening, Structure (which tests knowledge of grammar and mechanics), Reading, and Writing (Pyle, 2001)

### Android Application

Android is a mobile operating system (OS), based on the Linux Kernel, that is developed by Google. With a user interface based on direct manipulation, android is designed primarily for touch screen mobile devices such as smart phones and tablets computers, with specialized user interfaces for televisions (Android TV), cars (Android Auto), and wrist watches (Android Wear). (Prezi, 2015)

The OS uses touch inputs that loosely correspond to real-world actions, like swiping, tapping, pinching, and reverse pinching to manipulate on-screen objects, and a virtual keyboard.

### METHOD

This research design used in this study is developmental research in which the essence of its is on the basis of Research and Development (R&D) (Gall, Gall, & Borg, 2003). The research was designed to generate a product. The product was an E-TEFL application with web and android-based simulation. The study was conducted based on Instructional System Design that has some stages namely; analysis, system design, development, validation and revision (Peterson, 2003)

This application was developed using web and android-based simulation, and those two interfaces are interrelated because the learning outcomes will be directly monitored by lecturers in the system. The following figure is the explanation about the general features of instructional media system.



Fig. 1. Instructional media design in Android

The figure shows that the users learn E-TEFL application by using Android operating system, then the users will get learning materials, such as learning strategies and exercises in TOEFL preparation. There are three instruments of data collection in developing the product for test takers in Politeknik Elektronika Negeri Surabaya (PENS). The data were collected by applying questionnaire, interview and literature studies.

In the early stages of designing this application, the interview was conducted with lecturers who are taking in charge to administer the test in Pusat Bahasa Politeknik Elektronika Negeri Surabaya. The interview was hold in order to obtain information about the problems and the demands regarding the application design. From the interviews that have been carried out, the results are as follows, PENS Language Center organizes computer-based TOEFL in which the materials refer to standards of paper-based TOEFL from ETS (Educational Testing Service). In addition, PENS Language Center provides modules and intensive courses for the test takers. However,

some students still consider that the cost is relatively expensive. PENS Language Centre has not provided both online TOEFL learning system and web simulation. In data collection, the questionnaires were also distributed to IT (Informatics Engineering) students prior to web-based simulation.

There are two types of questionnaires administered to the subjects of study. The first is a questionnaire at an early stage before the application development which aims to find out a good instructional media which suits to the students' language needs. Meanwhile, the other type of questionnaire is intended to gain the responses of users toward the application.

At last, the literature studies were carried out to get some references related to this study. The references were found in the library of D4 PENS, Akashi Kosen, bookstores, and online sources from internet (e-book and official web of TOEFL). The information from related sources was obtained and compiled to write the theoretical basis and research

methodology, and to design the application.

System design and operating system of each feature in E-TEFL applications, both in web and mobile applications will be shown as follows.

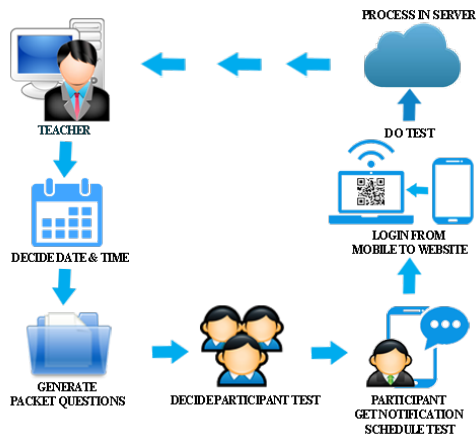


Fig. 2. E-TEFL simulation system design

The previous figure shows how learners automatically get the test schedule notifications which can be seen in mobile app. As a starting point, the students can join by scanning QR Code on the website or manual login. Learners can start working on test. The data will be stored automatically to the server and will be calculated at the end of the session. Teachers can monitor the score of students from website. Meanwhile, Android is also used to assist the learners to learn more

effectively. The following is the system design in Android:

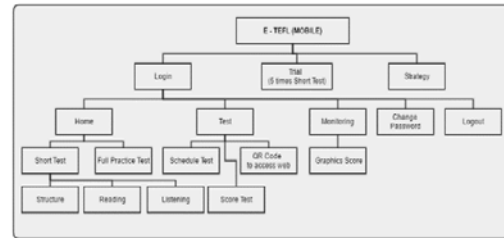


Fig. 3. E-TEFL menu system in Android

## FINDING and DISCUSSION

Testing was conducted to test the learning system in Android that is used to facilitate the participants in learning E-TEFL. E-TEFL test simulation was conducted twice for both classes D3 TI A&B 2014. The chart below presents the data on students' web-based simulation.

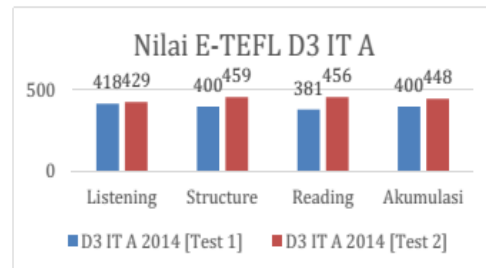


Chart 1. Class D3 TI A results on web-based simulation

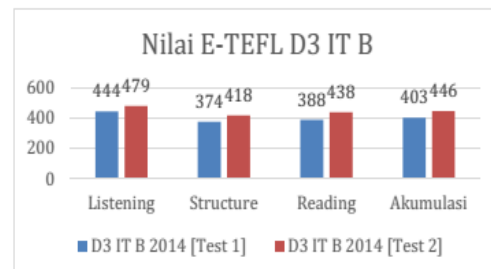


Chart 2. Class D3 TI B results on web-based simulation

The data presented on the bar chart shows that the result of second web-based simulation is likely to be higher than the first simulation. The testing in android-based simulation was intended for students who got score under 400. The android-based simulation was also conducted by those who want to have a frequent practice on TOEFL. The following is the result of testing in android-based simulation.



Fig. 4. Students' results on android-based simulation

The data presented above indicates that the result of second simulation is substantially higher than the first simulation. On the other hand, the analysis regarding the development of E-TEFL had been carried out to determine the

effectiveness and suitability of the product.

The range of analysis include the students' expectation on the use of instructional media and technology, E-TEFL application interface, E-TEFL simulation, E-TEFL application, 'Result and Review' app feature, 'Strategy' app feature, 'monitoring' feature in mobile app, lecturers' responses toward E-TEFL application and general opinion about E-TEFL application. In summing up the analysis on E-TEFL, the general opinion on E-TEFL application is shown as following.

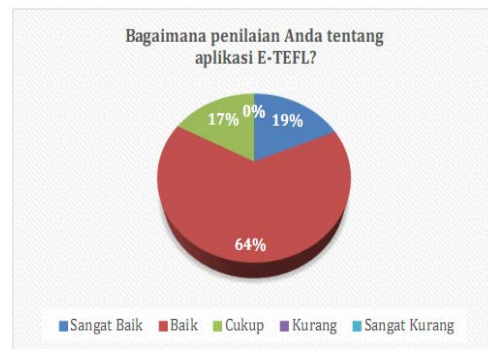


Chart 3. Students' responses toward E-TEFL app

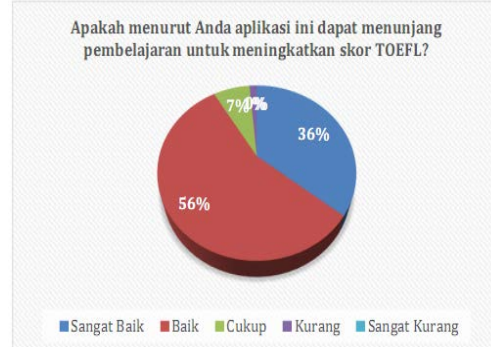


Chart 4. Students' expectation on E-TEFL app



The chart above shows the high level of satisfaction toward the E-TEFL application. Further, the test takers put high expectation on E-TEFL application to fulfill their language needs and most importantly upgrade their score.

## CONCLUSIONS

The conclusion after going through stages of designing, developing, testing, and analyzing are sum up as follows:

1. The E-TEFL simulation prior test can build the students' confidence as it is used as a medium of learning which is very helpful for learners to work on computer-based test.
2. The monitoring feature in application can measure the students' language skills in learning TOEFL. By having this feature, the teachers can decide how they should treat the students in order to improve the learners' language ability.
3. Integration and data exchange in website and android systems as well as the services in data retrieval, test schedule data,

monitoring data, and login with QR Code are accurate.

4. Based on the results of questionnaire and the try-out results, E-TEFL application can significantly help the test takers to reach the required score.

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