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## Developing Android-Based Teaching Modules Using MIT App Inventor

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### Abstract

Using android-based in the process of teaching and learning is one of attempts in elevating education quality. However, some teaching and learning sources are still paper based. This study was conducted to develop android-based teaching module for academic reading students in English Education Department. Applying RnD as research design, the researcher did data collection, preliminary study, need analysis, product construction, product implementation, evaluation, and product revision. The subject of this study is fourth semester students of IAIN Kediri majoring academic reading. After analyzing student's need and syllabus, the researcher designed the module three levels of exercise: easy, medium, and hard. This is aimed to know that the student's proficiency is surely improved. The module was developed using MIT App Inventor. After that, the product was validated by expert and implemented on students. The result shows positive response. In summary, the android-based module for academic reading is appropriate to facilitate students in learning English for academic purposes, especially reading.

## Introduction

Reading, undoubtedly, plays essential role in this world life. Seuss Geisel, an American cartoonist, said that "the more you read, the more things you will know". Hence, reading is a basic skill to improve another skill and to develop the world. Reading, sometimes, not only consist with several letters, but also a symbol and code to describe something (Nurdianti et al, 2019). Therefore, the goal of reading is to understand the meaning described in a text. Academic reading, one of branches in reading skill, is critical and meaningful reading in understanding academic text to study specific major or lesson (Winiharti et al, 2014). In academic reading, students should be able to comprehend a message in academic text (Warman, 2015). Nowadays, skill in academic reading is highly searched for working. That is

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why reading comprehension skill is required in many industries and companies (Fakhruddin, 2017). Mastering academic reading in college is an opportunity to prepare for future job.

Fast expansion of technology enforces all sectors in education to adapt. Nowadays, learning is not only about reading a book, and teaching is not only using board and marker. All lessons and materials should be able to be accessed anywhere and anytime, in or outside the school (Raja & Nagasubramani, 2018). One of learning sources used in teaching and learning process is module. Modules consist of some chapters, named course objectives, material, students activities, students exercises, and assessment session (Hamid et al, 2017). However, some modules are still paper based. This is not an effective way for students. Students need to study not only in school and not only when their teacher around. They should be facilitated to study independently and practically. Reflected on this situation, this research attempts to investigate some obstacles faced by students in academic reading class. Furthermore, this study will develop an android-based module for academic reading to help students improve their academic reading proficiency. Android is an operating system developed by Google. Based on Musahrain (2016), android consist of some system, such Linux-based system, middleware, and application. Android enables application creator to make their own application on it. While Uttarwar, et al (2010) defines android as operating system for low powered device. However, it has many hardware such as, camera, GOS, WiFi, and touch screen. Since android is a simple device and can be used by students in general, the researcher believes that developing module in android device will be very helpful for teaching and learning process. The product is expected to be an effective media in mastering academic reading for students

## Research Methods

Since this study aimed to develop a product, the appropriate research design used is RnD (Research and Development). Based on Latief (2015), Research and Development in educational field used to effectively develop an educational product under three criteria: valid, practical, and easy in use. Furthermore, the subject of this study are fourth semester students in English Department of IAIN Kediri who join academic reading class. In this study, several steps were implemented. First, researcher did preliminary study to analyze some cases which might be appears in academic reading. Besides, the researcher analyzed the syllabus, and examined student's need by collecting some data through observation sheet. Second, the researcher designed the product based on the data analysis. The product was conducted using MIT App Inventor. This MIT App Inventor includes set of graphich component and a set of program blocks or it also be known as a block-based programming language to help programmers producing and designing the apps easily (Amasha & Al-Omary, 2017). Third, the product would be validated by experts. After the evaluation, the product would be implemented on students in academic reading class. In the end the product would be revised if needed.

The conversion of the mean score of the expert validation and the field testing is displayed in table below.

Table 1. Conversion of the mean score

Scales	Interval	Descriptive Categories
1	$1 \leq x \leq 1.74$	Poor
2	$1.75 \leq x \leq 2.24$	Fair
3	$2.25 \leq x \leq 3.24$	Good
4	$3.25 \leq x \leq 4$	Very Good

## Results and Discussion

This part will show the results of product development from the beginning until the product is ready to massively be used. The steps of product development are: preliminary study and needs analysis, product planning and designing, product validation, evaluation, and product implementation.

### Preliminary Study

Preliminary study was used to investigate some reasons why students learning academic reading, students' need in mastering academic reading, what materials should present to improve students proficiency in academic reading, and how the product will help students to study effectively.

Based on the data, there are 3 main reasons of students' willingness to study English especially in academic reading course. The first reason is for continuing their course and comprehending the skill needed to support their academic life. The second reason is to understand the complexity of reading to ease them when they are facing problems in their daily life. The last reason is the work demand forced them to read many sources as well. Furthermore, teacher should provide many sources and reading materials to improve students' proficiency in academic reading. Those materials can be academic article, news, and formal letters. Accordingly, product made by the researcher is expected to help students elevating their academic reading competency. In addition, syllabus analysis shows that the course is reading for academic purposes. The syllabus in this study focused on the use of academic reading competency which matched with the objectives such as topic of paragraph, main idea of paragraph, drawing inferences, pattern of organization, paraphrasing and summarizing, and synthesizing. The result of this existing syllabus was considered as the guidance in designing the developed syllabus and material.

### Product Construction

Designing, validating, and evaluating the product are included in product construction. The result of those steps is written below.

### *Design*

There were five steps to develop interactive listening comprehension material. The first step was selecting and of gathering materials from many sources. Here, researcher took the materials from several websites, such as <http://www.ello.org/english/> <http://www.english-hilfen.de/en/index.htm> <http://www.englishstudydirect.com> and <http://www.esl.about.com>. The second step was adding or deleting. It deals with adding supplementing or extending what the source offers with extra tasks, or exercise or omitting repetitive, irrelevant, potentially unhelpful or difficult items. While the third step was modifying. It concerns with rewriting examples, activities, or explanations to improve relevance, impact, or clarity. The next step was simplifying. It focuses on rewriting to reduce the difficulty of tasks, explanations, or instructions. Then, the last step was reordering. It is in parallel with changing the sequence of topics or activities to fit more coherently with the goals.

Finally, three levels of exercise are served in this android-based module. Level easy had thirty topics. They are Animal, Babies, Balls, Cars, City Tips, Clothes, Computers, Families, Favor, Flags, Fruit, Hairstyles, Holidays, Hotels, Job Center, Man Horse, Materials, Movies, My Daily Diet, Pets, Places, Say What, Sports, Stuffs, The Gift, The Sign, Things To Do, Two Lovers, Vehicle, And Winter Snow. Every topic had six descriptive recorded text followed by task.

There were three pictures on the screen, the speaker described a picture then at the end of the description, the user should click on the right picture that the speaker had described.

The second level is medium. In this level, there are fifteen topics, they are: Breakfast, Collection, Comedy, Four Modes, France, Family Future, Halloween, Jeyong Travel, Job Options, Movie, Memory, Not Lost, Phone Call, Quake, Room Cost. There were two speakers' voice were talking in a conversation in this level. The tasks following the recorded conversation were in the form of multiple choices. There were questions followed by three up to four possible answers. The questions can be seen while the conversations were played.

The last level was hard level. In this level, It is said the hardest task to do because there were more than two people talking in the record and the question came after the record or the conversation finished. There were fifteen topics and ten questions in every topic.

### **Validation**

The product designed by researcher should be validated by experts. The validation process consists of two points, content validation and application design validation.

Table 2. Content Validation

No	Assessment Aspect	Score
1	The material of media has suitability with the syllabus.	4
2	The material suitable with competency standards and basic competencies.	4
3	The content of media developed is appropriate with language skill of college students	4
4	Learning topic are clear.	4
5	The material given are fills the students need.	3
6	Learning media arrangement are sequential and competed	4
7	The material given not too wide and out of topic	3
8	The learning media covers all materials to achieve learning objectives.	3
9	The uses of design are relevant with the topic.	4
10	The passages are clear and relevant with the topic.	4
11	Illustration and explanation of the material are easy to understand.	4
12	The language uses and component in the media are appropriate with the students' ages in average	4
13	The language uses in the media consist of language variations	3
14	The language used in sentences and paragraph matches the level of cognitive development of students.	4
Mean		3.71
Total		52
Percentage		93%

According to the result, the value is in the range of  $3.24 \leq x \leq 4$ . It means that the aspect falls into the category of "Very Good" ( $x=3.71$ ). In terms of the appropriateness of the content, there is no additional suggestion from the expert in this aspect. Besides, the result of percentage of content validation was 93% which laid at the interval of 90% -100% which means that the design of media developed marked as very good and no need to revise.

Table 2. Application design Validation

No.	Assessment Aspect	Score
A. Communication Aspect		
1	Menus and action button are simple and understandable.	4
2	Instruction texts are clear and easy to understand	4
3	Instruction texts using simple sentence.	4
B. Visual Design		
4	Home page layout uses interesting picture and illustration	3
5	Home page layout represent the whole of media content	4
6	Menus button design interesting and not exaggerated.	4
7	The position of navigation buttons are consistent each slide	4
8	Text position and align are clear and symmetric.	4
9	Font type used in the media interesting and easy to read	4
10	Text size appropriate (not to big / not to small).	4
11	Font color choosing not clashing with the background color	3
12	Color choosing are interesting and not to over.	4
13	Colors used in the media are comfortable to see.	4
14	The use of picture or illustrations are functional.	3
15	Picture style are appropriate with the average ages of students	4
16	Illustration uses can help deliver the material to the students	4
17	The use of animation not too over.	4
18	The audio of voice over has clear voice.	4
19	The use of sound effect not too much.	3
20	Overall audio used in the media are high quality	4
C. Interface Format		
21	Resolution size of media is appropriate and proper.	3
22	The graphic used in the media are high quality image	3
23	The layout interface each slide is consistent and comfortable to see	4
24	The order of regulation is well-structured, the hyperlink used are appropriate with the instruction.	4
25	The interface of media is good in Overall.	4
Average		3.76
Total		94
Percentage		94%

According to the result of the appropriateness of the illustration and design, the value of the mean is 3,76. It is in the range of  $3.24 \leq x \leq 4$ , meaning that it is categorized as "Very Good". Moreover, the result of calculation showed that the total score obtained from the expert validator was 94 with the percentage score 94% which laid at the interval of 90% - 100% which means that the design of media developed categorized as very good and no need to revise. There is no suggestion from the expert in this point.

### ***Evaluation***

Since the result of expert validation shows positive feedback, the researcher decided not to change the design and content in this product. Hence, the product is ready to be implemented on students.

### **Product Implementation**

After the product validated by expert, the researcher implemented the product to fourth semester students in academic reading class. Here is the response from students toward the product.

Table 3. Students' Response

No	Question	Agree	Strongly Agree	Disagree	Strongly Disagree
1.	I am trying to learn the android-based academic reading material at home before learning in the classroom	74.1%	24.1%	0.0%	0.0%
2.	With android-based academic reading materials, I have prior knowledge before studying them in the class	77.8%	22.2%	0.0%	0.0%
3.	With android-based academic reading materials, I felt better prepared to face subject matter that will be delivered by lecturers	81.5%	13.0%	5.6%	0.0%
4.	With android-based academic reading materials, I know the sequence of materials that will be delivered by the lecturer in the class	75.9%	24.1%	0.0%	0.0%
5.	Android-based academic reading material can be employed as a source of learning both in class and at home	68.5%	24.1%	7.4%	0.0%
6.	I can follow the lecturer's explanations about problem solving with the help of android-based academic reading materials.	63.0%	35.2%	1.9%	0.0%
7.	With android-based academic reading materials, I could understand examples of problem given by the lecturer faster	70.4%	29.6%	0.0%	0.0%
8.	With android-based academic reading material, I can participate actively in the discussion	66.7%	27.8%	5.6%	0.0%
9.	Through the description of the materials and examples of problems in the android-based academic reading material, I felt, I had insights into the advice and feedbacks from discussion	79.6%	20.4%	0.0%	0.0%
10.	I felt the discussion groups are warmer and more vibrant with the help of android-based academic reading materials.	72.2%	22.2%	5.6%	0.0%
11.	I felt more able to participate in class discussion after doing the exercises that are on the android-based academic reading materials.	79.6%	14.8%	5.6%	0.0%
12.	Practice questions from the android-based academic reading materials helped me to understand the material that has been delivered by the lecturer.	64.8%	33.3%	1.9%	0.0%
13.	I understand the material and practical exercises using android-based academic reading material faster	68.5%	27.8%	3.7%	0.0%
Mean		72.5%	24.5%	2.8%	0

Table above showed the result of implementation data analysis of students' responses to the implementation of learning by using android-based reading for academic purposes. They showed the majority of students agreed that the use of android-based media in academic reading had good impacts on them. More than 70% students (72.5%) had good perspective about the use of android-based media. Then, 24.5% students strongly agreed that android-based

media helped their ability in mastering academic reading. Then, from those facts, the researcher concluded that the media was completely ready to be applied.

This study attempts to develop a learning media to facilitate students in improving their reading proficiency. The product gives more learning tool for students to reach. The availability of more learning tools gives opportunity to develop wider range of pedagogy that are more formal and to control the learners in using smart-tool to study (Chun et al., 2016). In the process of developing android-based module for academic reading, from the beginning until the product finished, there are some supporting factors and inhibiting factors as well. The first supporting factor is Android-based module for academic reading provides innovation and renewal for both teacher and students in teaching and learning process. While the second factor is the feedbacks from experts as product validator are very constructive. Additionally, IAIN Kediri, especially English Education Department, provides opportunity and facility during the research.

Although there are several supporting factors, the researcher found some inhibiting factors as well. Those factors are designing android-based module for academic reading is a complex work for the researcher and the researcher should be self-taught since the material and design have not been widely shared.

Android-based module for academic reading is a product of this Research and Development study. Some literature indicate that, in general, android applications can encourage students to study since technology has been a part of daily life and become normalized (Hidayati & Diana, 2019). This product has these following qualities. Overall, the android-based module developed by the researcher gained "very good" criteria in almost all aspects. It means that the product is ready to be used by both teacher and students. Then, since the product is android-based, it can be use outside the class when the teacher is not around. Furthermore, Android-based module for academic reading consists of course outlines, activities, assessment, and timeline nd topic. Hence, this product is very complete as a module. Additionally, in exercise session, students can choose level based on their proficiency and can practice at anywhere. Furthermore, the teachers can use assessment session to assess students' proficiency and improvement. Apart from its quality, android-based modul for academic reading has some weakness. Since it is an application, students and teachers need to download it and it needs big spaces. Therefore, this product needs good internet connection.

## Conclusion

This study is research and development study which aimed to develop a modul for academic reading. The developed product, android-based module is developed based on student's need and syllabus analysis. The product has four chapters, named course description, activities, assessment, and time line and topic. The exercise in activities session has three levels: easy, medium, and hard. The assessment session is provided to make teachers assess students' proficiency easily. Furthermore, the materials are appropriate for college students to learn about academic reading. With all the qualities and effectiveness, apart from its weakness, it can be concluded that android-based module for academic reading can help students to improve and master academic reading.

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## References

- Amasha, M.A., & Al-Omary, S. (2017). Quizrevision: A Mobile Application Using the Google MIT App Inventor Language Compared with LMS. *International Journal of Advanced Computer Science and Applications*, 8(6), 313 – 320.
- Chun, D., Smith, B., & Kern, R. (2016). Technology in Language use, Language Teaching, and Language Learning. *Modern Language Journal*, 100, 64-80
- Fakhriddin, Arief. (2017). Reading Journal as a Way to Improve Students' Reading Comprehension. *English Teaching Journal*, 8(2), 1-6
- Hamid, Mustofa. et al. (2017). Development of Learning Modules f Basic Electronics-Based Problem Solving in Vocational Secondary School. *Jurnal Pendidikan Vokasi*, 7(2), 149-157
- Hidayati & Diana. (2019). Students' Motivation to Learn English using Mobile Application: The Case of Duolingo and Hello English. *Journal of English Education and Linguistics Studies*, 6(2), 189-213
- Latief, M.A. (2015). *Research Methods on Language Learning: An Introduction*. Malang: IKIP Malang
- Musahrain. (2016). Developing Android-Based Mobile Learning as a Media in Teaching English. *ICTTE*, 2(1), 307-313.
- Nurdianti, Santi. et al. (2019). Improving Students' Reading Comprehension Through Reciprocal Teaching Strategy on Narrative Text. *Professional Journal of English Education*, 2(2), 30-39
- Raja & Nagasubramani. (2018). Impact of modern technology in education. *Journal of Applied and Advanced Research*, 2018(3), S33-S35
- Uttarwar, Pritee. et al. (2021). A Literature Review on Android -A Mobile Operating system. *International Research Journal of Engineering and Technology*, 8(1), 1-6
- Warman, Liya Astarilla. (2015). Improving Students' Reading Comprehension Through The Use of Reciprocal Teaching Technique at STMIK Riau Pekanbaru. *Journal of English Education*, 1(2), 1-7
- Winiharti, Menik. et al. (2014). Reading Journal as a Way to Improve Students' Comprehension Toward a Textbook Reading Material. *Journal Lingua Cultura*, 8(2), 101-108