A PRELIMINARY STUDY OF EFL READING ANDROID APPLICATION DEVELOPMENT

Research Article

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Abstract

The present study reports the results of an exploration stage of research and development (RND) whose project is to develop an EFL reading android application. At this exploration stage, this study aims at finding out the possible weaknesses of the existing EFL reading media (textbook) and the needs for an ideal EFL reading android application. 33 tenth grade senior high school students at one of the schools in central Java, Indonesia, were engaged as the participants. Both quantitative questionnaire and qualitative interview to 6 students were assigned to garner the data. This exploration revealed that some weaknesses of the textbook were comprised of monotonous colors, minimum portability, less automatic concept, limited materials, less readable instructions, limited exercises, less direct feedback of the exercises, and insufficient explanations related to EFL reading skill indicators. In turn, the needs analysis data indicated that an EFL reading android application was required to be developed. The developed product was expected to be simple and easily used, motivating and facilitating, up-to-date, providing various EFL reading activities, portable to be used inside and outside of the classroom, and controlling. The ongoing product in the form of the prototype is also presented at the end of this study report.

Keywords: android application; reading; English as a foreign language (EFL); media

1. Introduction

The twenty-first century is noted for the significant role that digital technologies play in many aspects of human's life worldwide (Sivachenko & Nedashkivska, 2017). The necessity to develop and integrate new, robust technologies dedicated to enhancing the learning and teaching quality is also mentioned in the digital agenda in advanced countries (Crăciun, 2015). Naturally, the people of today's generation including today's students also use digital technologies for networking, shopping, playing games, information searches, and other daily-life tasks or activities (Sivachenko & Nedashkivska, 2017). The presence of digital technology also ends up with the ease which helps them communicate with one another, advocate about some topics of concern, share their common interests, and give them the freedom to express their emotions and opinions (Alsuraihi, Almaqati, Abughanim, & Jastaniah, 2016). If the role of technology is anchored in the context of education, it seems considerably logical that teachers should use the maximum function of technology as the media of learning. Accordingly, students' interest to boost their skills in the learning process can be enhanced in such a way.

The advancement of technology *de facto* also naturally leads today's students to be very close to the growth of English language use. The daily utilization of technological and social media makes them faced with the necessity of appropriate English mastery since English is mostly the language of technological media operation. Hence, it makes sense that the use of English as an additional language has become a part of the natural need of today's students. Alongside *the status quo* of technological advancement, today's students are even called digital native (Grigoryan, 2018; Kress et al., 2001; Prensky, 2001). Something pivotal but implicit can be discerned from such condition whereby, in the context of English as a foreign language (EFL) pedagogy, today's students require the setting of learning that meets their nature as a digital native. In addition, to help reach the success of EFL learning *per se*, Richards (2015) suggests EFL teachers to provide students with two dimensions of learning that entail the learning process taking place inside the classroom and that carried out outside of the classroom. One of the meaningful ways to properly manage to help students experience the aforementioned two learning dimensions is by integrating the use of technology in EFL learning (Hazar, 2018; Hung, Shu-Shing, & Lim, 2006; Kaware & Sain, 2014; Spengler, 2015).

As regards the role of technology in EFL learning, it has gradually been scientifically and seriously addressed by a range of scholars. Some of them strive for studying the issue pertinent to mobile tools such as smartphones, iPads, and iPods as the possible and feasible media to promote the quality and success of EFL learning (Gangaiamaran & Pasupathi, 2017; Kukulska-Hulme, 2009; Zhang, 2016). Progressing scientific works in the realm of technology-based learning media really makes sense if viewed from the importance of such studies owing to the growing needs of today's students which cannot be entirely fulfilled by the old-fashioned learning media such as mere textbooks. Besides the effective use and substantive importance of textbooks (Munir, 2013), they are still considered insufficient to work alone in support of nowadays students' English mastery and needs. They need to be accompanied by the additional media which are technological in order to capably facilitate students to become the active and continuous learners, those who can maintain the act of EFL learning both inside and outside of classrooms. Hence, developing technology-based EFL learning media is of importance.

However, beyond the paramount importance of developing technology-based EFL learning media, a number of factors also lie to hinder the enactment of such media development. One of the major factors is that developing such media is difficult to be carried out. Most EFL teachers do not have adequate skill to do it due to the very technical sense of doing this. Thus, the efforts made by scholars having their major interest in technology and media development are really expected in order that EFL teachers have various alternative media sources to be utilized in the classroom. Furthermore, concerning with developing the technology-based learning media based on the needs and the opportunity of the current situation, it is also vitally important to take into account the availability of media products that can help teachers choose the most appropriate ones for their classes (Radić-Bojanić & Topalov, 2016). This point is true since although many guidelines available for the media of learning are suggested, the individual subjective judgments of the teachers are always central to making a decision whether to use them or not (Rahimpour & Hashemi, 2011).

Recently, there are a great number of EFL learning media whose products are in the form of smartphone applications available in the online application center such as *playstore, appstore,* and etc. They extend to not only the general ones like the applications for enhancing basic English skills but also the specific ones such as the applications assigned for improving TOEFL reading comprehension, or critical English reading skills. Notwithstanding, the particularities offered by such applications are set merely in the area of

a particular linguistic competence. There has not been found any online mobile application which offers its use for a specific EFL curriculum enacted in a certain country leading to the conceivability of utilizing it in the real EFL learning in the classroom as well as providing the capability of its use after the classroom learning process. This case lies to be a gap that triggers this study to focus its work on it specifically by making a research project to develop an EFL E-learning mobile application that does justice to the current Indonesian EFL curriculum.

This project initiates to circumscribe its work on the field of reading skill. The fundamental rationale beyond limiting this project extension to reading skill is because this skill becomes the most predominant in Indonesian EFL curriculum at schools. Reading skill frequently becomes the prioritized goal of learners living in the countries whose citizens use English as a foreign language (Hadi, 2006). This condition aligns with Indonesia which is incorporated into the expanding circle country inasmuch as the citizens use English as a foreign language as depicted by Kachru (1990) in his world Englishes model. Such focus of interest that this study brings to the realm of English reading skill makes a convincing case for the nature of English social function in Indonesia.

The overall project of this study is oriented towards developing an EFL reading android application. However, in this paper, what is offered to the readers is delimited on the preliminary study that this project carries out. This scope provides the results of the possible weakness of the currently used EFL reading media (textbook) and the need analysis for the EFL reading android application based on the students' views especially those engaged in EFL pedagogy at one of the schools in central Java, Indonesia. The results of this exploration are further functioned as the fundamental resources to develop the abovementioned EFL reading android application.

The school chosen as the place of this study is sufficiently ideal since mostly the students at this school are familiar with technological communicative tools like gadget and others. They use such tools daily for communication in social media, entertainment, games, and fulfilling their interest such as taking pictures, recording videos, and so on. Such present condition becomes a potential nature found amid the students, and this condition can positively support their success of EFL reading mastery. It is in line with Richards' (2015) notion in that the internet, technology, media, and the use of English in a face-to-face mode, as well as virtual social networks, provide greater opportunities for meaningful and authentic language use than that are available in the classroom.

The existing condition associated with the use of technological media amongst students at the school involved as the place of this study promotes the convenience for this study to be undertaken. Therefore, to report the data of the preliminary study, this paper addresses the following formulated research question:

1. What are the possible weaknesses of the existing EFL reading media (textbook) and needs for the EFL reading android application viewed by the students at one of the senior high schools in central Java, Indonesia?

Further, once the data which answer the formulated research question have been reported, this paper also displays the recent progressive work in the form of the prototype of EFL reading android application.

2. Research methodology

The present paper was a preliminary study of research and development project. In this part, a mixed qualitative and quantitative method was used to reveal the possible weaknesses

of the existing EFL reading media (textbook) and the need analysis data required to develop the EFL reading android application. The concurrent embedded model of the mixed method was employed in this study since the research question was answered by both qualitative and quantitative data.

2.1. Participants

The participants engaged in this study were 33 tenth grade students at one of the senior high schools in central Java, Indonesia. There were several classes having the same grade and level, but this study was delimited to involve the students from one class as the representative of those from other classes. The selection of that class was undertaken by assigning a random sampling technique. Especially for those, the six students taken from 33 ones, who were engaged to be interviewed, they were chosen purposively.

2.2. Techniques of data collection

The data in this research were garnered by utilizing the following data collection techniques.

2.2.1. Interview

The interview was carried out to 6 participants (students) in order to recognize the weaknesses of the existing EFL reading media (textbook) and to reveal the needs for the ideal EFL reading android application on the basis of the students' perspective. The researchers optimized the interview guideline for help. The result of the interview offered the qualitative data required by this study.

2.2.2. Questionnaire

The structured questionnaire was assigned to find out the required quantitative data of this study. 37 items which had previously been examined for their validity and reliability were assigned in the questionnaire. Every single item of questionnaire negotiated the possible weaknesses of the existing EFL reading media (textbook) and the needs for the EFL reading android application. The questionnaire was distributed to the 33 students from the selected class. They were asked to confirm the given items on the basis of the real situation they experienced. A checklist format was adopted in the questionnaire. Hence, the informants could simply give a thick for the best option presented under each item offered in the questionnaire based on their stance.

2.3. Techniques of data analysis

The qualitative data of this study were analyzed by using an interactive model as proposed by Miles, Huberman, and Saldana (2014). Four phases comprised of data collection, data condensation, data display, and conclusion drawing were executed. With respect to those phases, after the data of this study were collected from the interview, the entire data were condensed by finding out a range of meaningful themes to be coded along with grouping the data based on convenient themes. Here, the data which were not oriented to the appropriate themes were reduced to avoid bias. In turn, as regards the data display, the data which had been ideally grouped on the basis of their themes were critically selected to be displayed. The display was made by presenting a graph, table, or interview transcripts. Especially for interview transcripts, those selected to be displayed were ones that represented others based on the core of the addressed notions. The displayed data were further followed by some elaborations to provide data interpretation and discussion. The last phase went to conclusion drawing which was made by concisely summarizing all of the findings alongside their interpretation and discussion.

For the quantitative data, they were analyzed by calculating the percentage of every negotiated item confirmed by the respondents. The calculation relied on the following formula:

$$P = \frac{\sum Xi}{\sum X}$$

Note:

P	= Assessment
$\sum Xi$	= total answer of the respondents
$\sum X$	= the sum of the highest answer

2.4. Trustworthiness

In this study, the trustworthiness of the qualitative data was reached by pursuing the data credibility, transferability, dependability, and confirmability. The data credibility was pursued by applying a couple of strategies such as prolonged engagement at the field, peer debriefing, doing triangulation that covered theoretical, source, and method triangulation, collecting and interpreting all raw data, and doing member checks. Concerning with the data transferability, it was reached by doing purposive sampling technique and giving an adequate thick description in the report pertinent to each step this study took. In relation to the data dependability, it was afforded by utilizing more than one technique of data collection and establishing an audit trail. In turn, for the data confirmability, it was pursued by doing triangulation, conducting reflexivity practice, and preparing the audit trail of confirmability.

Appertaining to the quantitative aspect of this study, the trustworthiness was oriented to preparing a valid and reliable instrument. The quantitative instrument assigned in this study was a structured questionnaire. To reach the validity, the questionnaire was examined by some related experts and by doing the statistical calculation. Along with the statistical calculation of the validity, that of the reliability was also undertaken. Once the instrument (questionnaire) had been valid and reliable, it was further used to garner the focused data of this study.

3. Findings

This section provides the data display of both qualitative and quantitative ones alongside the related data interpretation. The display is presented through giving a couple of selected interview transcripts for the qualitative data and giving the tabulated data for the quantitative findings.

3.1. Interview results

The interview was conducted to 6 students who were purposively chosen in prior. The interview negotiated about the possible weaknesses of the existing EFL reading media which referred to the textbook commonly used at their school, and the needs for the ideal EFL reading application.

3.1.1. The possible weaknesses of the existing EFL reading media (textbook)

Of the entire interview data, there emerged a couple of themes becoming the oriented topics addressed by the participants whereby the weaknesses of the existing EFL reading media (textbook) were encountered under those themes. The themes which were coded entailed the monotonous colors of the textbook, the minimum portability of the textbook, the less automatic concept of the textbook, the limited provision of EFL reading materials in the textbook, the less readable instructions given in the textbook, the limited given exercises in

the textbook, the less direct feedback of the exercises in the textbook, and the insufficient explanations related to EFL reading skill indicators. The following presentation and the selected transcripts of the interview with the participants are given to display the interview data. Especially for the transcripts, those which are presented below are ones considered relevant to represent others that address the same notions.

3.1.1.1. The monotonous colors of the textbook

As regards the colors of the given textbook students commonly used in the learning process of EFL reading skill, mostly the participants acknowledged that the colors were not interesting. This issue aligned with participant 2's opinion that said *"the colors are monotonous. They are just white and black. Some of the given pictures are not clearly seen" (Participant 2).* Appertaining to that transcript, besides merely having two monotonous sorts of color, the brightness of the color was also obscured so that some pictures displayed in the textbook could not be seen properly.

3.1.1.2. The less readable instructions given in the textbook

The participants also depicted the quality of instruction for learning activities in the EFL reading textbook which they generally used at school. Associated with this point, participant 4 mentioned *"In a few parts of the textbook units, the given instruction is not so clear so that it is difficult to be interpreted by students. They then end up with misleading instruction" (Participant 4).* The given transcript impliedly emphasized that the instruction of learning activities which the textbook gave could not be discerned by students alone by virtue of the difficulty level which tended to be challenging. From the feature of the instruction, the textbook did not support an autonomous learning for students.

3.1.1.3. The minimum portability of the textbook

During the interview, the participants at some point also addressed the portability of the textbook. They complained about the size and weight of the textbook which impeded them to bring and use the textbook at any comfortable place to learn. This condition was in line with participant 1's perception which expressed *"The textbook used is not portable because it is quite big and heavy so it cannot be brought everywhere. To learn through the textbook really needs a particular limited place" (Participant 1).* It was implied that the students actually loved learning EFL reading at many places where they felt comfortable. However, the size and the weight of the textbook did not seem to support them for that.

3.1.1.4. The less automatic concept of the textbook

The students also mostly expected to have a chance to see their direct score of completing some EFL reading exercises. But this expectation did not seem to be conceivably reached if using the textbook. Participant 6 addressed about this point as she said: *"The textbook of course cannot automatically provide students with their scores once they are finished working on it" (Participant 6).* The sense of atomicity of the media of EFL reading materials at some degree was required by the participants.

3.1.1.5. The limited provision of EFL reading materials in the textbook

The participants also addressed the set of EFL reading materials furnished in the textbook they used. According to most of them, the materials were constantly in such a way which could not be further modified if needed. The number of the given materials was also limited owing to the permanence of hard-copy type of the textbook. This case was also expressed by participant 1 who said *"the textbook of course only has limited materials, and they have been permanently printed so they cannot be modified when needed" (Participant 1).* An implication could be inferred from this transcript whereby the participants basically required

the media which potentially provided an opportunity to be modified in case an up-to-date content was at some point necessary.

3.1.1.6. The limited given exercises in the textbook

The interview also went to negotiate about the EFL reading exercises provided by the textbook. Most of the students came up with the same perception in that the textbook only managed to serve the limited and permanent forms of exercises. This condition indicated that the teacher should have to provide some additional worksheets or textbooks if some time more exercises were considered important to be assigned to students, or (if not) the students would just be served by the merely available but limited exercises. This issue aligned with participant 3's opinion which said: *"the given exercises in the textbook were limited so the teacher needs to provide more additional exercises from other textbooks if any and if necessary" (Participant 3)*.

3.1.1.7. The less direct feedback of the exercises in the textbook

The other point shared by the participants about the characteristic of EFL reading exercises given in the textbook was that the exercise did not allow students to get direct feedback of their work. It aligned with participant 6's viewpoint which said *"there are no key answers for every exercise in the textbook so the teachers are the key. The feedback really depends on the teachers, and the time of getting the feedback of exercise is, of course, limited to the availability of the teacher's time" (Participant 6)*. As emphasized by this transcript, the feedback after doing EFL reading exercise only relied on the teacher, but the provision became naturally limited based on the chance or the teacher's time. The feedback system was not automatic.

3.1.1.8. The insufficient explanations related to EFL reading skill indicators

In connection with the provision of the ideal micro-skills of EFL reading which were covered by the textbook, all micro-skills had been provided for students. However, most students felt that the related explanations about those micro-skills which at some degree could be relied on by students to be learned independently seemed insufficient. This case aligned with participant 3's perception which said *"the textbook addresses about some indicators like main idea, explicit information, implicit information, vocabulary reference, and etc. However, there are no adequate explanations regarding those indicators to help students independently learn" (Participant 3)*.

3.1.2. The need analysis for the EFL reading android application

In order to garner the data *vis-a-vis* the expected EFL reading android application, the interview was led to be oriented to the expected and particular characteristics that the students required to facilitate their reading skill improvement. The following interview transcripts drew on the students' notions, perceptions, or standpoints properly selected to be displayed since they were representative towards others' similar cognitions.

Participant 1: *"We need a sort of media which is easily operated and simply used"*.

Participant 2: *"I think we need to have a motivating android application to help us easily learn English reading skill"*.

Participant 3: *"For me, we need to keep being up-to-date for the newest materials. Hence, the media which can afford that need is really required for us nowadays"*.

Participant 4: *"We need a media that facilitates us with various EFL reading activities"*.

Participant 5: *"We sometimes need to have a media which can also be simply used outside of the class"*.

Participant 6: *"I think, we need a sort of media that can automatically control us as long as dealing with EFL reading activities"*.

Some information could be interpreted from the above transcripts whereby the participants required the presence of an EFL reading android application that entailed a range of characteristics which were simple and easily used, motivating and facilitating, leading to be up-to-date, providing various EFL reading activities, portable to be used inside and outside of the classroom, and controlling.

3.2. Questionnaire results

The following graphic and table serve the questionnaire data *vis-a-vis* the responses given by 33 students. The responses were oriented to the issues of the possible weaknesses of the existing EFL reading media. The existing media used by the school where those students learned EFL reading referred to English textbook. The given responses also extended to the issue of students' needs with respect to the expected EFL reading android application viewed by the students.
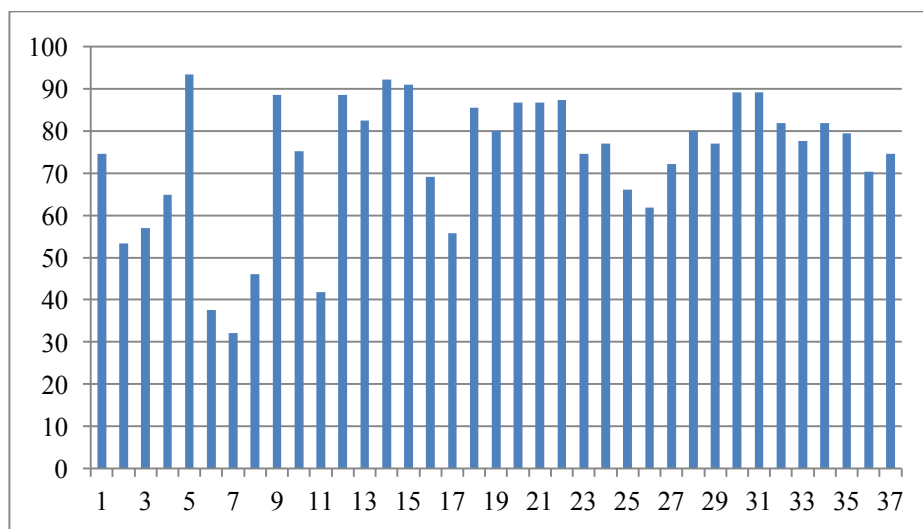

Figure 1. The possible weaknesses of the textbook and needs analysis of the EFL reading android application

Table 1. *The detailed percentages in connection with the displayed figure 1*

No.	The possible weaknesses of the EFL reading textbook	Percentages
1	The color of the media layout is monotonous.	75%
2	The content arrangement is difficult to follow.	53%
3	There are sentences shown in the media which are not readable.	57%
4	The pictures/icons shown in the media are unclear.	65%
5	The media cannot be inserted into students' pocket.	93%
6	The media is too thick to bring everywhere.	38%
7	The media is not possible to be brought home/possessed by every student.	32%
8	The media is expensive.	46%
9	The media cannot check the students' scores automatically.	88%
10	The content of the media is not possible to be corrected or changed.	75%
11	The media is too heavy to be brought everywhere.	42%
12	The media has no security feature.	88%
13	The media contains limited exercises related to each topic.	82%
14	There is no answer key for each exercise.	92%

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15	There is no explanation related to the answer of each exercise.	91%
16	If the media is broken or lost, to supply the media is complicated.	69%
17	The media is difficult to be duplicated.	56%
18	The media cannot be used in a dark condition.	85%
19	There is a limitation of the content in the media.	80%
20	The media only covers a periodical material or topic.	87%
21	The media does not use the latest technological support.	87%
22	The use of the media cannot be controlled from a different location.	87%
23	The media is not interesting when students use it.	75%
24	The media has no reflection on learning feature.	77%
25	The media does not explain an indicator of the main idea.	66%
26	The media does not explain an indicator of the explicit information.	62%
27	The media does not explain an indicator of the implicit information.	72%
28	The media does not explain an indicator of the contextual meaning of words.	80%
29	The media does not explain an indicator of the reference word.	77%
The needs for EFL reading android application		
30	It is necessary for developing an additional media to improve the students' motivation and interest	89%
31	It is necessary for developing an affordable and simple media.	89%
32	It is necessary for developing a media whose contents can be changed or added.	82%
33	It is necessary for developing a media that can be controlled inside and outside the classroom.	78%
34	It is necessary for developing a media that provides a lot of exercises.	82%
35	It is necessary for developing a media that provides a real examination.	79%
36	There is no Android-based application as a learning media in prior.	70%
37	It is necessary for developing a media with Android-based application integrated with teaching reading skill.	75%

With respect to the data displayed in the above table, since the range of the scale of every item encompassed strongly agree (SA), agree (A), neutral (N), disagree (D), and strongly disagree (SD), the indication of a positive agreement for the whole items were interpreted if the respondents shared their agreement within the percentage 70% to 100%. Therefore, it could be understood that all the respondents indicated that the possible weaknesses of the textbooks extended to the following criteria:

3.2.1. The possible weaknesses of the EFL reading textbook

- The color of the media layout is monotonous.
- The media cannot be inserted into students' pocket.
- The media cannot check the students' scores automatically.
- The content of the media is not possible to be corrected or changed.
- The media has no security feature.
- The media contains limited exercises related to each topic.

- There is no answer key for each exercise.
- There is no explanation related to the answer to each exercise.
- The media cannot be used in a dark condition.
- There is a limitation of the content in the media.
- The media only covers a periodical material or topic.
- The media does not use the latest technological support.
- The use of the media cannot be controlled from a different location.
- The media is not interesting when students use it.
- The media has no reflection on learning feature.
- The media does not explain an indicator of the implicit information.
- The media does not explain an indicator of the contextual meaning of words.
- The media does not explain an indicator of the reference word.

3.2.2. The expected EFL reading android application

- It is necessary for developing additional media to improve the students' motivation and interest.
- It is necessary for developing an affordable and simple media.
- It is necessary for developing a media whose contents can be changed or added.
- It is necessary for developing a media that can be controlled inside and outside the classroom.
- It is necessary for developing a media that provides a lot of exercises.
- It is necessary for developing a media that provides a real examination.
- There is no Android-based application as a learning media in prior.
- It is necessary for developing a media with Android-based application integrated with teaching reading skill.

3.3. The interpretation of quantitative and qualitative data

This study found that the data garnered from the questionnaire supported and positively confirmed those solicited from the interview. The issues regarding the possible weaknesses of the existing EFL reading media (textbook) and the needs of the EFL reading android application were addressed in a similar orientation. The following tables present the results of positive conformation interpreted from both the qualitative and quantitative data.

Table 2. *The possible weaknesses of the EFL reading textbook*

The coded data of Interview	The data of the questionnaire
The monotonous colors of the textbook	The color of the media layout is monotonous.
	The media is not interesting when students use it.
The minimum portability of the textbook	The media cannot check the students' scores automatically.
	The media cannot be inserted into students' pocket.
	The media cannot be used in a dark condition.
	The use of the media cannot be controlled from a different location.
The less automatic concept of the textbook	The content of the media is not possible to be corrected or changed.
	The media has no security feature.
The limited provision of EFL reading	There is a limitation of the content in the media.

materials in the textbook	The media only covers a periodical material or topic.
	The media does not use the latest technological support.
	The media has no reflection on learning feature.
The less readable instructions given in the textbook	The media contains limited exercises related to each topic.
The limited given exercises in the textbook	
The less direct feedback of the exercises in the textbook	There is no answer key for each exercise.
	There is no explanation related to the answer to each exercise.
The insufficient explanations related to EFL reading skill indicators	The media does not explain an indicator of the implicit information.
	The media does not explain an indicator of the contextual meaning of words.
	The media does not explain an indicator of the reference word.

Table 3. *The expected EFL reading android application*

The coded data of Interview	The data of the questionnaire
It is required the simple and easily used media.	It is necessary for developing an affordable and simple media.
It is required the media leading to being up-to-date.	It is necessary for developing a media whose contents can be changed or added.
It is required the motivating and facilitating media.	It is necessary for developing additional media to improve the students' motivation and interest
	It is necessary for developing a media that provides a real examination.
	There is no Android-based application as a learning media in prior.
	It is necessary for developing a media with Android-based application integrated with teaching reading skill.
It is required the media providing various EFL reading activities.	It is necessary for developing a media that provides a lot of exercises.
It is required the portable media to be used inside and outside of the classroom.	It is necessary for developing a media that can be controlled inside and outside the classroom.
It is required the media that is controlling.	

4. Discussion

This study found several weaknesses of the current EFL reading media (textbook) used by the tenth-grade students at one of the senior high schools in central Java, Indonesia. They were comprised of the monotonous colors of the textbook, the minimum portability of the textbook, the less automatic concept of the textbook, the limited provision of EFL reading materials in the textbook, the less readable instructions given in the textbook, the limited given exercises in the textbook, the less direct feedback of the exercises in the textbook, and the insufficient explanations related to EFL reading skill indicators. It is in line with Ali &

Ahmad (2014) who explain that the limited forms, features, and portability of textbooks most often impede the continuity of successful education in the era of technology like nowadays. That makes a convincing case for the android application to gain its popularity in the educational field these days. Today's students have their own different and particular nature of lives. They are even called digital native (Grigoryan, 2018; Kress et al., 2001; Prensky, 2001). In their era, the expansions of knowledge they require to access are vastly growing. The limited power and potential of a mere textbook cannot optimally facilitate today's students. They need a sort of the facilitating learning media that meets their nature for the success of their education. This condition also prevails in the context of English education. They need an EFL learning media that can maintain their comfort in learning, the one which meets their digital living framework. Such a framework which students naturally have in their lives is the fundamental consideration taken by this study to develop EFL reading android application that does justice to their nature and needs.

Furthermore, this study also revealed a number of criteria needed by students in relation to the negotiated EFL reading android application. The students required an EFL reading android application which was simple and easily used, motivating and facilitating, leading to be up-to-date, providing various EFL reading activities, portable to be used inside and outside of the classroom, and controlling. Besides the nature of today's students which are technological, the encountered criteria as such are considered paramount important to be discerned in this study since they mainly become the basic points to initiate the design of EFL reading android application that is afforded by the whole project after finished with this exploration or preliminary study. Corresponding to the whole project, EFL reading android application, which is developed in progress, the application thus far has been created in the form of a prototype. This prototype has been made to conform to the needs shared by the students and to avoid the existing possible weaknesses of EFL reading media. In the last part of this paper, we, the researchers, present the current result of our prototype of EFL reading android application.

5. Conclusion

As a preliminary study of research and development project for EFL reading android application, this study reveals a range of possible weaknesses had by the existing EFL reading media (textbook). They involve the monotonous colors of the textbook, the minimum portability of the textbook, the less automatic concept of the textbook, the limited provision of EFL reading materials in the textbook, the less readable instructions given in the textbook, the limited given exercises in the textbook, the less direct feedback of the exercises in the textbook, and the insufficient explanations related to EFL reading skill indicators. The further investigation carried out by this study finds out several criteria needed for the EFL reading android application. The application is required to be simple and easily used, motivating and facilitating, leading to be up-to-date, providing various EFL reading activities, portable to be used inside and outside of the classroom, and controlling.

This study is only delimited on the exploration stage of research and development project for EFL reading android application. A further study which will progressively be conducted is the examination and experimentation of the EFL reading android application prototype. It is also recommended for other researchers to conduct further studies in the area of android application development which widens the orientation to other English skills rather than reading. Today, a portable EFL learning media like android application is not only interesting in its use but also pedagogically useful and needed.

6. The portrayal of EFL reading android application prototype

This presently displayed prototype is developed based on the exploration data striving for finding out the possible weaknesses of the existing EFL reading media (textbook) alongside the needs for the ideal EFL reading android application. The related data have been reported in the previous sections. The following details depict the aforementioned prototype.

The prototype layout of the EFL reading android application on the students' smartphone screen can be viewed in the following image:
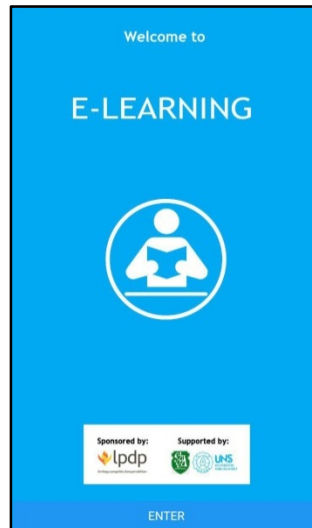
Figure 2. First Layout

In this first layout, it tells the function of this application which is mobile learning to improve reading skill, and it also tells that this project is sponsored by LPDP and supported by SMAN 1 Surakarta and Sebelas Maret University. The students can press ENTER on the screen and then move to the next layout which shows a box with the username and password based on the registration in the website server which is operated by the teacher. If the username and password are matched, the screen will show the main layout.
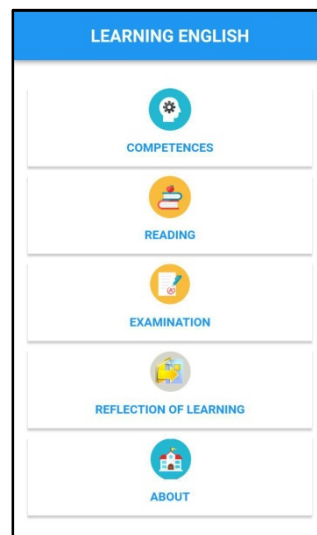
Figure 3. Main Layout

In this main layout, the students can utilize several features. Those are *competence* to know the targets of learning, *reading* to comprehend the explanation, sample text and exercise for each topic arranged by the teacher on the website server, *examination* to conduct

the real test and to measure the students' understanding, *reflection of learning* to inform the teacher in what point the students have comprehended and in what point the students have not comprehended, and *about* to inform the general information related to developing of this application to the users.
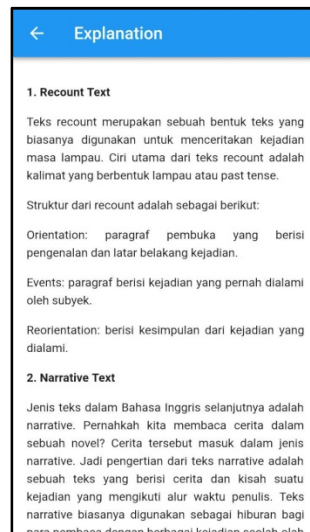

Figure 4. Explanation Layout

In this explanation layout, the students can read and comprehend the material arranged by the teacher. There is no limitation of the material inserted in this application. If the information or learning material takes a large space on the screen so the students can scroll down the layout to read the next information. Similar to all features in this application, if the teacher inserts information more than a layer so the students need to scroll down until they have completely read the information. For each topic, there will be a definition, structure of the text, and sample text based on the information provided by the teacher on the website server. All the contents in this layout or other layouts in this application can be edited, added or removed by the teacher via the website server.
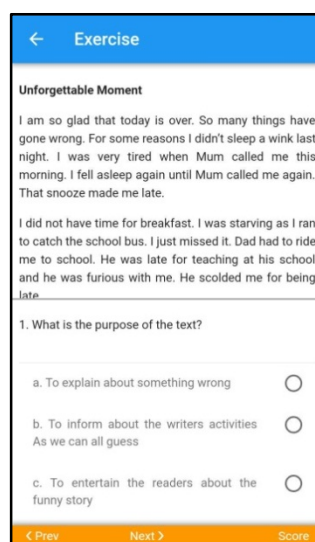

Figure 5. Exercise Layout

In this exercise layout, the students can practice their reading skill by focusing on reading the text and trying to answer each question, and in the next layout, the students can check their scores.
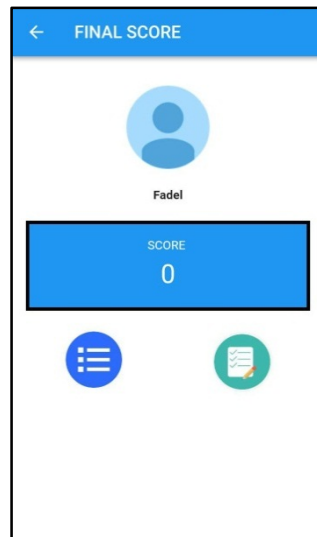
Figure 6. Final Score Layout

In this layout, the students can check their score based on their answers to each question. Concerning with the two icons under the score box, they are the icons for navigations where the students can touch the right icon to move to the exercise explanation to comprehend more the previous question and their answers or touch the left icon to go back to the collection of exercises to practice other exercises.
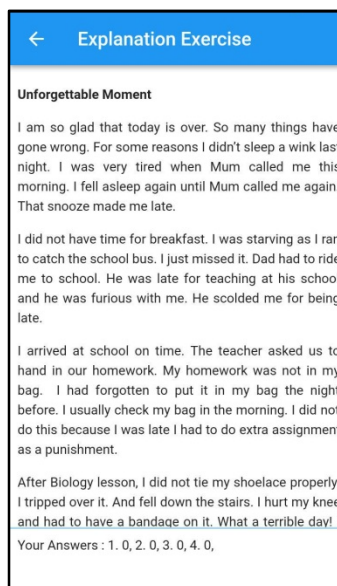

Figure 7. Exercise Explanation Layout

In this layout, the students can reread the text and questions to check their previous answers to find out which question that they answer correctly and wrongly.
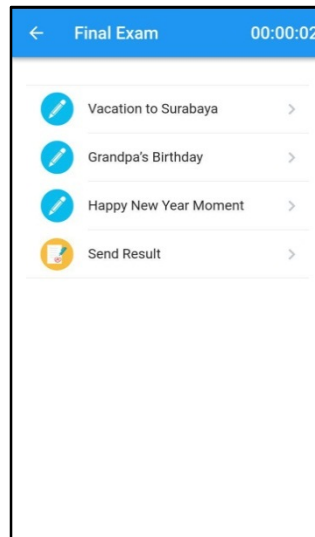
Figure 8. Final Exam Layout 1

In this layout, the students can join in the real examination of reading skill in which there is limited time to answer the question whereby the limited time has an automatic system to send the students' answers if the time is over. If the time is still available meanwhile the students have already answered the whole questions, the students can tap to send the result icon on the screen to submit their work to the website server so that automatically the timer will be turned off.
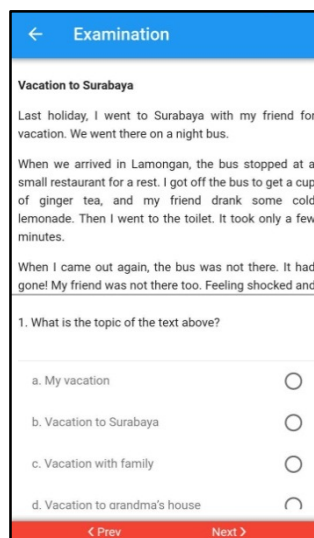

Figure 9. Final Exam Layout 2

Acknowledgment

References

Ali, S. M., & Ahmad, M. T. (2014). Scope and impact of android application in education sector. *Chronicle of the Neville Wadia Institute of Management Studies & Research*, 284–290.

Alsuraihi, A. K., Almaqati, A. S., Abughanim, S. A., & Jastaniah, N. A. (2016). Use of Social Media in Education among Medical Students in Saudi Arabia. *Korean Journal of Medical Education*, *28*(4), 343–354. https://doi.org/10.3946/kjme.2016.40

Crăciun, D. (2015). Training teachers for the knowledge society : Social media in science education. *Broad Research in Artificial Intelligence and Neuroscience*, *6*(3–4), 82–88.

Gangaiamaran, R., & Pasupathi, M. (2017). Review on use of mobile apps for language learning. *International Journal of Applied Engineering Research ISSN*, *12*(21), 973–4562.

Hadi, A. (2006). Reading based-classroom activities: An effort toward the integration of language skills in teaching English as a foreign language in Indonesia. *TEFLIN Journal*, *17*(1), 59–68. https://doi.org/10.15639/TEFLINJOURNAL.V17I1/61-71

Hazar, E. (2018). Digital competence in primary education: the case of Turkish language, mathematics and personal and social development. *International Online Journal of Education and Teaching (IOJET)*, *5*(2), 443–458.

Hung, D., Shu-Shing, L., & Lim, Y. T. K. (2006). Authenticity in learning for the 21 st Century: Bridging the formal and the informal. *Educational Technology Research and Development*, *60*(6), 1–36. https://doi.org/10.1007/s11423-012-9272-3

Kachru, B. (1990). World Englishes and applied linguistics. *World Englishes*, *9*(1), 3–20.

Kaware, S. S., & Sain, S. K. (2014). ICT application in education: An overview. *International Journal of Multidisciplinary Approach and Studies*, *1*(5), 138–147.

Kress, G., Jewitt, C., Bourne, J., Franks, A., Hardcastle, J., Jones, K., & Reid, E. (2001). *English in urban Classrooms: A multimodal perspective on teaching and learning, 2nd Edition* (2nd ed.). London: RoutledgeFalmer. https://doi.org/10.4324/9780203397305

Kukulska-Hulme, A. (2009). Will mobile learning change language learning? *ReCALL*, *21*(2), 157–165. https://doi.org/10.1017/S0958344009000202

Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook*. Thousand Oaks, California 91320: SAGE Publications, Inc.

Munir, S. (2013). An evaluation of the reading comprehension textbooks taught at the English Education Department of Islamic Higher Education in West Sumatera. *Qudus International Jurnal of Islamic Studies*, *1*(1), 59–75.

Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon*, *9*(5), 1–6. https://doi.org/10.1108/10748120110424816

Radić-Bojanić, B. B., & Topalov, J. P. (2016). Textbooks in the EFL classroom: Defining, assessing and analyzing 3. *Papers of The Faculty of Philosophy*, (178002), 137–153. https://doi.org/10.5937/ZRFFP46-12094

Rahimpour, M., & Hashemi, R. (2011). Textbook selection and evaluation in EFL context. *World Journal of Education*, *1*(2), 62–68. https://doi.org/10.5430/wje.v1n2p62

Richards, J. C. (2015). The changing face of language learning: Learning beyond the classroom. *RELC Journal*, *46*(1), 5–22. https://doi.org/10.1177/0033688214561621

Sivachenko, O., & Nedashkivska, A. (2017). Technologically enhanced language learning and instruction: *East/West: Journal of Ukrainian Studies*, *IV*(1).

Spengler, S. (2015). *Educators' perceptions of a 21st century digital literacy framework. Walden University*. Walden University.

Zhang, S. (2016). Mobile English learning: An empirical study on an APP, English fun dubbing. *International Journal of Emerging Technologies in Learning*, *11*(12), 4–8. https://doi.org/10.3991/ijet.v11i12.6314