

Mobile-Based Licensure Examination for Teachers (LET) Reviewer for Social Science: A Comparative Analysis on Student Performance in LSPU-CTE Students

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Abstract

With the country's quest to provide quality education, teachers must pass the Licensure Examination for Teachers. In line with this, Higher Educational Institutions (HEIs) align their curriculum by integrating review sessions for their learners to equip them and increase their chances of passing the licensure examination after graduation.

Using this groundwork, the proponent developed a Mobile-Based LET Reviewer for Social Science to be utilized by the students at Laguna State Polytechnic University (LSPU) under the College of Teacher Education (CTE) which can help CTE students to develop the necessary skills needed in passing licensure examinations. It focuses on the idea that this reviewer is an android application that can be utilized offline with questions mainly concentrated on questions related to the Social Science specialization.

Moreover, the current study aimed to determine the level of acceptability of the Mobile-Based LET Reviewer in terms of its components as to objectives, content, and feedback. It also tested the level of acceptability of the Mobile-Based LET Reviewer in terms of its features as to usability, graphics, format, and design. The researcher also aimed to determine the mean performance of Social Science and Non-Social Science students, and the significant difference in the mean performance of Social Science and Non-Social Science students in terms of pre- and post-assessment.

The pre-experimental method using a one-group pretest-posttest approach was used in this study. The research involved thirty-eight (38) Social Science majors and sixty (60) Non-Social Science majors from the College of Teacher Education selected by using Purposive Sampling technique. The developed Mobile-Based LET Reviewer was validated by teachers/instructors from LSPU-CTE Santa Cruz Campus and the level of acceptability was assessed by 20 Social Science experts and 20 ICT experts from Secondary Schools in Pagsanjan. The level of acceptability and mean performance was measured using mean and standard deviation while the significant difference in the mean performance was measured using t-test.

Keywords: Licensure Examination for Teachers; mobile-based; android application; objectives; content; feedback; usability; graphics; format; design

1. INTRODUCTION

The use of technology is evident in all aspects of our lives – from the use of mere appliances in our homes to the adoption of mobile learning in the academic field. It has greatly modified how we communicate and also plays a big role in how we learn, and of course, how we teach.

Technology has been found to be a useful tool in acquiring learning in different aspects, thus, its incorporation into education may facilitate the processing of knowledge from simple to complex and may aid in the increase of exam passing rates. In the Philippines, one must pass the Licensure Examination for

Teachers (LET) to be a licensed professional teacher. In this view, Higher Educational Institutions (HEIs) aligned their curriculum by including review sessions for their graduating students to help increase their chances of passing the licensure examination. According to some LSPU-CTE students, the current system offered in the university is pen and paper review sessions; though deemed helpful, students are still looking for alternative reviewers that are easily accessible anytime, anywhere.

Although there are countless reviewers available online, students find it difficult to access them due to restrictions in their connectivity, copyright, and reliability of online information. This enthused the researcher in developing an offline Mobile-Based LET Reviewer specifically designed for Social Science specialization. This will be utilized by Fourth Year students from Laguna State Polytechnic University under the College of Teacher Education particularly those preparing for Licensure Examination for Teachers.

Finally, the study would determine the level of acceptability of the Mobile-Based LET Reviewer in terms of its components and features, and compare the student performance of LSPU-CTE students.

1.2 Objective of the Study

This study aims to develop and utilize the Mobile-Based LET Reviewer as a tool to gauge the improvement in student assessment results among BS Education students from the Social Science and Non-Social Science majors. The study will also investigate the implications of using the Mobile-Based LET reviewer concerning component and features.

Specifically, it sought to answer the following questions:

1. What is the level of acceptability of the mobile-based LET reviewer in terms of components as to:
 - 1.1 Objectives;
 - 1.2 Content; and
 - 1.3 Feedback?
2. What is the level of acceptability of the mobile-based LET reviewer in terms of features as to:
 - 2.1 Graphics;
 - 2.2 Format;
 - 2.3 Design; and
 - 2.4 Usability?
3. What is the mean performance of Social Science and Non-Social Science Majors in terms of:
 - 3.1 Pre-assessment?
 - 3.2 Post-assessment?
4. Is there a significant difference in the mean performance of Social Science and Non-Social Science majors in terms of:
 - 4.1 Pre-assessment; and
 - 4.2 Post assessment?

2. REVIEW OF RELATED LITERATURE

Assessment is crucial to the educational process and plays a significant part in education. With proper assessment, teachers can evaluate not only their pupils but also effectivity of their own strategies

and pedagogical approaches. In introducing instructional materials, usually, the pretest-posttest design is adapted to check its reliability and validity. This measures the effectiveness and efficacy of the intervention applied to a learning group.

The current study on mobile-based LET reviewer will investigate the effects of the developed material on student assessment scores of Social Science and Non-Social Science majors. In order to develop a mobile-based LET reviewer, it is important to ensure that it has relevant and reliable components – objectives, content, and feedback.

One of the key features of instructional design is the objectives. The use of language is an essential aspect in ensuring that the objectives of the material achieved a desirable outcome. Its focus also affects the type of objectives employed in the instructional material (Marken & Morisson, 2013). In relation to mobile application development, defining the overall objectives serves as a guide in developing a prototype that serves its purpose (Jayatilleke, et.al., 2018).

Content is information made available by a website or any electronic medium. According to Johnson and Jones (2022), content usefulness and relevancy play a huge role in achieving the end user's goal and show the extent of content effectiveness. This will build the trust and confidence of end users in the created content. It also has a positive correlation with student motivation as it enhances clarity and empirical attention to the interventions (Albrecht & Karabenick, 2017).

Feedback not only cultivates motivation but also increases learner engagement. Immediate, private, and personalized feedback helps the end user and the content creator in assessing the effectiveness and efficacy of the mobile application or learning material (Bikanga Ada, 2021). Hence, feedback is an essential indicator for researchers and educators in the development of their mobile applications (Christy & Pillai, 2021). Such feedback can be gathered by looking into the features of a developed mobile application.

The aforementioned related literature regarding components played a great role in the development of the Mobile-Based LET Reviewer for Social Science. The researcher ensured that the developed mobile application has a definite objective which served as the blueprint for reliable, valid content, and included immediate feedback to end-users as they use the application.

In developing a Mobile-Based LET Reviewer for Social Science, it is also very crucial to ensure that the features of the reviewer is taken into great consideration. This includes graphics, format, design, and usability.

Graphics is the direct feature that one sees upon accessing a mobile application. Learners usually express interest and engagement with high-quality interfaces and expressive aesthetic design features, thus mobile applications support learning (Ruf, et.al, 2022). As a matter of fact, mobile app learning activities create a diverse and positive education value (Hsu & Ching, 2013) as it fosters innovativeness when applied to real-life learning environment setting.

The format of the content plays a vital role in ensuring that it adapts to the learners' study pace and makes the content more interesting and coherent to their needs (Fidalgo, et.al., 2016). As it affects how the information is displayed overall, the developer must take the format or general design of the content into account. The creation has an instant impact on the product's overall appearance, which influences how others will perceive it.

The usability of the materials will be evident as the user will figure out if it is comprehensible and discoverable and if they can manage to operate the system even though they are not highly capable of using

online materials. It had to possess practical worth or applicability to the needs of the students. Concrete experience to facilitate learning and the acquisition retention and usability of materials are equally important.

The current generation demands smooth interaction with their devices through the mobile application that they use; hence, the design of an application aids in positive engagement and leads to a favorable impression in terms of satisfaction (Sandesara, et.al., 2022).

The aforementioned related literature about features was considered while developing the Mobile-Based LET Reviewer for Social Science. The mobile application developed has graphics, format, design, and usability suited to the needs of the end users.

In conclusion, technology encourages a substantial notion and style of learning to a diverse group of graduating students who will later face licensing examinations. This can help them build the necessary abilities to ensure their chances of passing the exam rather than relying just on luck.

3. METHODOLOGY

The study was conducted at Laguna State Polytechnic University (LSPU) Santa Cruz Main Campus. The researcher identified two sets of respondents: (1) ICT and Social Science experts from Secondary Schools at Pagsanjan District; and (2) Fourth year college students from Laguna State Polytechnic University Santa Cruz Campus under the College of Teacher Education, as they are the target end-users of the developed android application. Respondents assessed the level of acceptability of the Mobile-Based LET Reviewer in terms of its components such as objectives, content, and feedback and in terms of its features such as usability, graphics, format, and design.

Purposive sampling was used in the selection of the respondents of both groups. The first group of respondents were composed 20 ICT experts and 20 Social Science experts from the Secondary School at Pagsanjan District and the second group was composed of thirty-eight (38) Social Science students and sixty (60) Non-Social Science students from the College of Teacher Education.

To analyze and interpret the data gathered, the statistical tools used were Weighted Mean and Standard Deviation to determine the level of acceptability of the Mobile-Based LET Reviewer in terms of its components and features while T-Test was used to determine the level of performance of Social Science and Social Science students and to determine the level of significance of Social Science and Non-Social Science students in their pre-assessment and post-assessment.

For the development of the material, the researcher utilized trial versions of iSpring quiz maker and Web2App APK Builder. The questions were taken from various sources both online and offline. The developed material was validated by the teachers/instructors from Laguna State Polytechnic University. After which, the necessary permits were secured to conduct the study. The researcher prepared the research instrument in a form of questionnaire to evaluate the level of acceptability of the Mobile-Based LET Reviewer in terms of components such as objectives, content, and feedback likewise to generate assessment of the level of acceptability of the Mobile-Based LET Reviewer in terms of features such as usability, graphics, format, and design among its respondents.

The questionnaire was divided into three parts:

1. Personal information of the respondents;
2. Questions to determine the level of acceptability of the components as to objectives, content, and feedback; and
3. Questions to determine the level of acceptability of the features as to usability, graphics, format, and design.

In order to avoid guesswork and to obtain one-hundred percent responses, the questionnaire is provided with a five-point Likert-type scale of optional answer with equivalent range and verbal interpretation as follows:

Scale	Range	Verbal Interpretation
5	4.20 – 5.00	Strongly Agree
4	3.40 – 4.19	Agree
3	2.60 – 3.39	Moderately Agree
2	1.80 – 2.59	Disagree
1	1.00 – 1.79	Strongly Disagree

One-group pretest-posttest design was used to compare student performance of Social Science and Non-Social Science students from Laguna State Polytechnic University under College of Teacher Education. The researcher utilized a self-made pretest and post test that was used before and after the introduction of the Mobile-Based LET Reviewer for Social Science android application.

The results of the data gathered were analyzed using the statistical tools such as Weighted Mean and Standard Deviation to determine the level of acceptability of the Mobile-Based LET Reviewer in terms of its components and features. In addition, the T-Test was used to determine the level of performance of Social Science and Social Science students and to determine the level of significance of Social Science and Non-Social Science students in their pre-assessment and post-assessment.

4. RESULT AND DISCUSSION

Table 1. Level of Acceptability of the Components of the Mobile-based LET Reviewer in Terms of Objectives

STATEMENTS	MEAN	SD	REMARKS
The mobile-based LET reviewer is realistic and reliable.	4.93	0.27	Strongly Agree
Offer students clear background about the questions that they may encounter in LET.	4.60	0.50	Strongly Agree
Have a diverse yet unified set of questions and ideas.	4.85	0.36	Strongly Agree
Questions are comprehensible.	5.00	0.00	Strongly Agree
Direct and lead its purpose.	4.85	0.36	Strongly Agree
Weighted Mean	4.85		
SD	0.20		
Verbal Interpretation	Highly Acceptable		

Table 1 illustrates the level of acceptability of the components in the development of the mobile-based LET review in terms of objectives.

Respondents strongly agree that the Mobile-Based LET Reviewer contains questions that are comprehensible ($M=5.00$, $SD=0.00$). The objectives of the Mobile-Based LET Reviewer are realistic and reliable. On the other hand, the reviewer contained clear background about the questions that students can encounter ($M=4.60$, $SD=0.50$).

The weighted mean score of 4.85 indicates that the level of acceptability of Mobile-Based LET Reviewer in terms of components as to objectives is Very High. This means that the respondents are satisfied with the objectives of the Mobile-Based LET reviewer since the developed material has comprehensible questions which adds to its reliability in providing a parallel experience as if taking the LET examination.

Table 2. Level of Acceptability of the Components of the Mobile-based LET Reviewer in Terms of Content

STATEMENTS	MEAN	SD	REMARKS
Presentation is clear, concise, and understandable	4.83	0.39	Strongly Agree
Reflects the most important aspect of what is being taught	4.63	0.49	Strongly Agree
Picture, graph, and design are relevant.	5.00	0.00	Strongly Agree
Provides information that are reliable and factual.	5.00	0.00	Strongly Agree
Can be easily understood by the students	4.63	0.49	Strongly Agree
Weighted Mean		4.82	
SD		0.21	
Verbal Interpretation		Highly Acceptable	

Table 2 illustrates the level of acceptability of the components in the development of the mobile-based LET review in terms of content.

Respondents strongly agree that the Mobile-Based LET reviewer contains relevant picture graph and design and it provides reliable and factual information ($M=5.00$, $SD=0.00$). The content of the Mobile-Based LET reviewer is presented in a clear, concise, and understandable manner ($M=4.83$, $SD=0.39$). On the other hand, the Mobile-Based LET Reviewer reflects the most important aspect of what is being taught and can be easily understood by the students ($M=4.63$, $SD=0.49$).

The weighted mean score of 4.82 indicates that the level of acceptability of the Mobile-Based LET reviewer in terms of components as to content is Very High. This means that the respondents are satisfied with the content of the Mobile-Based LET reviewer since the developed material has content that is reliable and factual and contains appropriate pictures, graphs, and design.

Table 3. Level of Acceptability of the Components of the Mobile-based LET Reviewer in Terms of Feedback

STATEMENTS	Mean	SD	Remarks
I am satisfied with the application.	4.90	0.30	Strongly Agree
I had a good experience using the application.	4.90	0.30	Strongly Agree
The interface of the application was appropriate.	4.90	0.30	Strongly Agree
The application was functional.	4.90	0.30	Strongly Agree
The application is useful.	4.90	0.30	Strongly Agree
Weighted Mean	4.90		
SD	0.30		
Verbal Interpretation		Highly Acceptable	

Table 3 illustrates the level of acceptability of the components in the development of the mobile-based LET review in terms of feedback.

Respondents strongly agree that they are satisfied with the Mobile-Based LET reviewer and had a good experience using the application. The application has an appropriate interface and is useful and functional ($M=4.90$, $SD=0.30$).

The weighted mean score of 4.90 indicates that the level of acceptability of the Mobile-Based LET reviewer in terms of components as to feedback is Very High. This means that the respondents are satisfied with the feedback in the Mobile-Based LET reviewer since the developed material has appropriate interface, is functional and useful, and provides good user-experience.

Table 4. Level of Acceptability of the Features of the Reviewer in Terms of Usability

STATEMENTS	Mean	SD	Remarks
Satisfies the needs of the user.	5.00	0.00	Strongly Agree
The mobile-based LET reviewer performs the task accurately.	4.80	0.41	Strongly Agree
Accommodates the users well.	4.93	0.27	Strongly Agree
Technology enhances the learning style of users.	4.98	0.16	Strongly Agree
The contents of the reviewer help the students acquire the learning needed for the preparation for taking the exam.	4.93	0.27	Strongly Agree
Weighted Mean	4.90		
SD	0.30		
Verbal Interpretation	Highly Acceptable		

Table 4 illustrates the level of acceptability of the features of the reviewer in terms of usability.

Respondents strongly agree that the Mobile-Based LET reviewer satisfies the needs of the user ($M=5.00$, $SD=0.00$). Technology enhances the learning style of users ($M=4.98$, $SD=0.16$). On the other hand, the mobile-based LET reviewer performs the task ($M=4.80$, $SD=0.41$).

The weighted mean score of 4.90 indicates that the level of acceptability of the Mobile-Based LET reviewer in terms of features as to usability is Very High. This means that the respondents are satisfied with the usability of the Mobile-Based LET reviewer since it satisfies the needs of the user which adds to its reliability in providing a similar experience as if taking the LET examination.

Table 5. Level of Acceptability of the Features of the Reviewer in Terms of Graphics

STATEMENTS	Mean	SD	Remarks
Graphics and illustrations are readable.	4.98	0.16	Strongly Agree
Presentations of graphic are presentable.	4.98	0.16	Strongly Agree
Artistically appealing.	4.88	0.34	Strongly Agree
Helps the author to convey message he wants.	4.83	0.39	Strongly Agree
Add information to the contents.	4.93	0.27	Strongly Agree
Weighted Mean	4.92		
SD	0.18		
Verbal Interpretation	Highly Acceptable		

Table 5 illustrates the level of acceptability of the features of the reviewer in terms of graphics.

Respondents strongly agree that the Mobile-Based LET reviewer contains graphics and illustrations that are readable and presentable ($M=4.98$, $SD=0.16$). The Mobile-Based LET reviewer also adds information to the contents ($M=4.93$, $SD=0.27$). On the other hand, the reviewer helps the author to convey the message he wants ($M=4.83$, $SD=0.39$).

The weighted mean score of 4.92 indicates that the level of acceptability of the Mobile-Based LET reviewer in terms of features as to graphics is Very High. This means that the respondents are satisfied with the graphics of the Mobile-Based LET reviewer since the developed material has readable and presentable graphics which add to its consistency in providing a similar experience as if taking LET examination.

Table 6. Level of Acceptability of the Features of the Reviewer in Terms of Format

STATEMENTS	Mean	SD	Remarks
Presentation is clear and concise.	4.90	0.30	Strongly Agree
Follows the same format as LET.	4.40	0.50	Strongly Agree
Font size is readable.	4.48	0.51	Strongly Agree
Pictures and other graphics are relevant.	4.93	0.27	Strongly Agree
Ideas are properly arranged and coherent.	5.00	0.00	Strongly Agree
Weighted Mean	4.74		
SD	0.17		
Verbal Interpretation	Highly Acceptable		

Table 6 illustrates the level of acceptability of the features of the reviewer in terms of format.

Respondents strongly agree that the ideas presented in the Mobile-Based LET reviewer are properly arranged and coherent ($M=5.00$, $SD=0.00$). The reviewer also contained pictures and other graphics that are relevant ($M=4.93$, $SD=0.27$). On the other hand, the Mobile-Based LET reviewer follows the same format as LET ($M=4.40$, $SD=0.50$).

The weighted mean score of 4.74 indicates that the level of acceptability of the Mobile-Based LET reviewer in terms of features as to format is Very High. This means that the respondents are satisfied with the format of the Mobile-Based LET reviewer since the developed material has ideas that are properly arranged and coherent which adds to the reliability of the developed material.

Table 7. Level of Acceptability of the Features of the Reviewer in Terms of Design

STATEMENTS	Mean	SD	Remarks
Provides questions on a specific course that are interrelated.	5.00	0.00	Strongly Agree
Observes consistency in the format.	4.93	0.27	Strongly Agree
Follows the rules and guidelines in formulating questions.	4.90	0.30	Strongly Agree
Increase the rate of LET passers as its goal.	5.00	0.00	Strongly Agree
Sticks to its aim to give more information for the test-takers.	5.00	0.00	Strongly Agree
Weighted Mean	4.97		
SD	0.08		
Verbal Interpretation	Highly Acceptable		

Table 7 illustrates the level of acceptability of the features of the reviewer in terms of design.

Respondents strongly agree that the Mobile-Based LET reviewer provides questions on a specific course that are interrelated, increases the rate of LET passers as its goal, and sticks to its aim to give more information to its test-takers ($M=5.00$, $SD=0.00$). On the other hand, the Mobile-Based LET reviewer follows the rules and guidelines in formulating questions ($M=4.90$, $SD=0.30$).

The weighted mean score of 4.97 indicates that the level of acceptability of the Mobile-Based LET reviewer in terms of features as to design is Very High. This means that the respondents are satisfied with the design of the mobile-based LET reviewer since it provided course-related questions and provided information that increases the goal of LET takers to pass the licensure exam making the developed material reliable.

Table 8. Level of Performance of Social Science Majors (Pretest and Post Test)

Score	Pre-test		Post Test		Verbal Interpretation
	f	%	f	%	
25-30	0	0.00	31	81.58	Outstanding
19-24	1	2.63	3	7.89	Very Satisfactory
13-18	17	44.74	4	10.53	Satisfactory
7-12	20	52.63	0	0.00	Fairly Satisfactory
0-6	0	0.00	0	0.00	Did not Meet Expectation
Total	38	100	38	100	
Mean	12.63	Fairly	26.13	Outstanding	
SD	3.05	Satisfactory	4.22		

Table 8 illustrates the level of performance scores of Social Science students.

Out of 38 respondents, pre-test score “7 to 12” received the highest frequency of seventeen (17) or 44.74% of the total sample population. While for the post-test score “25 to 30” received the highest frequency of thirty-one (31) or 81.58% of the total sample population. Pre-test score shows the mean (M=12.63, SD=3.05) as remarked as Fairly Satisfactory improved based on the post-test score with mean of (M=26.13, SD=4.22) with a remark of Outstanding. Based on the results, we can infer that the mobile-based LET reviewer helps in increasing the performance level of students.

Table 9. Level of Performance of Non-Social Science Majors (Pretest and Post Test)

Score	Pre-test		Post Test		Verbal Interpretation
	f	%	f	%	
25-30	0	0.00	8	13.33	Outstanding
19-24	0	0.00	31	51.67	Very Satisfactory
13-18	10	16.67	19	31.67	Satisfactory
7-12	47	78.33	2	3.33	Fairly Satisfactory
0-6	3	5.00	0	0.00	Did not Meet Expectation
Total	60	100	60	100	
Mean	9.83	Fairly	19.62	Very	
SD	2.79	Satisfactory	4.18	Satisfactory	

Table 9 illustrates the level of performance scores of non-social science major students.

Out of 60 respondents, pre-test score “7 to 12” received the highest frequency of forty-seven (47) or 78.33% of the total sample population. While for the post-test score “19 to 24” received the highest frequency of thirty-one (31) or 51.67% of the total sample population. Pre-test score shows the mean (M=9.83, SD=2.79) as remarked as Fairly Satisfactory improved based on the post-test score with a mean of (M=19.62, SD=4.18) with a remark of Very Satisfactory. Based on the results, we can infer that the mobile-based LET reviewer helps in increasing the performance level of students.

Table 10. Significant Difference of Student's Performance of Social Science students majors in their pre-test and post-test assessment.

Respondents	Performance	t-stat	p-value	Analysis
Social Science Major	Pre-Test	-35.31	0.000	Significant

Post-Test				
Pre-Test				
Non-Social Science Major		-45.43	0.000	Significant
Post-Test				

Table 10 presents the significant difference of student's performance of social and non-social science major students in their performance assessment.

Both Pre-test and Post-test of Social Science and Non-Social Science majors' students was observed to have any significant difference to the performance of the students in teaching social science. This is based on the computed t values obtained from the tests which were greater than the critical t value. Furthermore, the p-values obtained were less than the significance alpha 0.05, hence there is presence of a significance. Thus, the Mobile-Based LET Reviewer is an effective material in increasing performance as evident in the assessment results.

Table 11. Significant Difference in Students' Performance of Social Science to Non-Social Science Students in their Post-assessment

Respondents	Performance	t-stat	p-value	Analysis
Social Science Major	Post-Test	8.454	0.000	Significant
Non-Social Science Major	Post-Test			

Table 11 presents the significant difference in students' performance of social science to non-social science major students in their post-test assessment.

The Post-test of Social Science to Non-Social Science majors' students was observed to have any significant difference in the performance of the students. This is based on the computed t values obtained from the tests which were greater than the critical t value. Furthermore, the p-values obtained were less than the significance alpha 0.05, hence there is presence of a significance.

From the findings above, we can infer that at 0.05 level of significance, the null hypothesis "There is no significant difference of student's performance of social science to non-social science major students in their post-test assessment" is rejected.

CONCLUSION

Based on the different findings of the study, the following conclusion is stated based on the statement of the problem:

The level of acceptability of the Mobile-Based LET reviewer as to components and features is Very High which means that the developed material satisfies the respondents in providing a parallel experience as if taking LET examination.

The mean performance of Social Science and Non-Social Science majors both improved after using the Mobile-Based LET Reviewer as evident in the pre-assessment and post-assessment results which means that the developed material contributes to the increase of the Post Assessment scores of both Social Science and Non-Social Science majors.

Both Pre-test and Post-test of Social Science and Non-Social Science majors were observed to have a significant difference. Moreover, the Post-Test of Social Science to Non-Social Science majors was observed to have a significant difference in the performance of the students. This means that the performance of both Social Science and Non-Social Science majors positively increased after the introduction of the developed material.

The researcher, therefore, concludes that the null hypothesis “There is no significant difference in the mean performance of Social Science and Non-Social Science majors in terms of Pre-assessment and Post-assessment” is rejected. It means that the use of Mobile-Based LET Reviewer for Social Science has a positive effect, seeing that the assessment scores increased. This proves that regardless of the major of the end-user, the Mobile-Based LET Reviewer is highly effective material in increasing performance in answering Social Science-related questions in LET.

RECOMMENDATIONS

1. A Mobile-Based LET Reviewer can be used as a supplementary material in LSPU Campus as they implement their review sessions.
2. Teachers may provide questions that are localized and aligned with their curriculum, thereby creating a more reliable test bank.
3. Future researchers may develop a Mobile-Based LET Reviewer focused on other learning areas.
4. Future developers of the Mobile-Based LET Reviewer may set a time limit per item for the pre/posttest to practice accuracy as if taking the LET examination.
5. Administrators, if they wish to adapt and implement the material, may buy a license from the iSpring quiz maker to update the questions included in the material. In addition, they may also buy a licensed version of Web2APP APK Builder to create more reliable android application as it addresses the limitation of screen resolution in the current material developed.

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REFERENCES

- Albrecht, J. R., & Karabenick, S. A. (2017). Relevance for learning and motivation in education. *The Journal of Experimental Education*, 86(1), 1-10. <https://doi.org/10.1080/00220973.2017.1380593>
- Bikanga Ada, M. (2021). Evaluation of a mobile web application for assessment feedback. *Technology, Knowledge and Learning*. <https://doi.org/10.1007/s10758-021-09575-6>
- Christy, B., & Pillai, A. (2021). User feedback on usefulness and accessibility features of mobile applications by people with visual impairment. *Indian Journal of Ophthalmology*, 69(3), 555. https://doi.org/10.4103/ijo.ijo_1042_20
- Fidalgo, P., Santos, I., & Thormann, J. (2016). Instructional material formats: college students preferences. *EERA European Educational Research Association | EERA*. <https://eera-ecer.de/ecer-programmes/conference/21/contribution/37300/>
- Hsu, Y., & Ching, Y. (2013). Mobile app design for teaching and learning: Educators' experiences in an online graduate course. *The International Review of Research in Open and Distributed Learning*, 14(4). <https://doi.org/10.19173/irrodl.v14i4.1542>
- Jayatilleke, B.G., Ranawaka, G.R., Wijesekera, C. and Kumarasinha, M.C.B. (2018), "Development of mobile application through design-based research", *Asian Association of Open Universities Journal*, Vol. 13 No. 2, pp. 145-168. <https://doi.org/10.1108/AAOUJ-02-2018-0013>
- Morrison, G., & Marken, J. (2013). Objectives over time: A look at four decades of objectives in the educational research literature. *Contemporary Educational Technology*, 4(1). <https://doi.org/10.30935/cedtech/6088>
- Mwandosya, G., & Mbise, E. (2019). Evaluation feedback on the functionality of a mobile education tool for innovative teaching and learning in a higher education institution in Tanzania. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 15(4), 44-70.
- Ruf, A., Zahn, C., Agotai, D., Iten, G., & Opwis, K. (2022). Aesthetic design of app interfaces and their impact on secondary students' interest and learning. *Computers and Education Open*, 3, 100075. <https://doi.org/10.1016/j.cao.2022.100075>
- Sandesara, M., Bodkhe, U., Tanwar, S., Alshehri, M. D., Sharma, R., Neagu, B., Grigoras, G., & Raboaca, M. S. (2022). Design and experience of mobile applications: A pilot survey. *Mathematics*, 10(14), 2380. <https://doi.org/10.3390/math10142380>

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