Learning with Mobile Phone: Evaluating Grammar Learning in Learning Objects

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ABSTRACT

The primary goal of this study is to evaluate the customized mobile application comprised of learning objects (LOs). The mobile app evaluated was personally developed by the researcher to serve as supplemental material for learning grammar (i.e., the active and passive voice) with the aim of improving the learners' grammar competence. The study employed the descriptive-evaluative research design focusing on the perspectives of the students on the mobile application through the "Learning Object Evaluation Scale for Students (LOES-S)" in terms of three constructs: (1) learning, (2) quality, and (3) engagement. Significant findings of the study included how beneficial and valuable the mobile application was to the learners in terms of "learning" with WM = 4.55, (2) "quality" with WM = 4.56, and (3) "engagement" with WM = 4.68. The study developed mobile application for learning grammar (i.e., the active and passive voice) was proven effective based on the evaluation of the students. Hence, recommended for wide dissemination.

Keywords: *Learning Objects, Grammar Learning, Mobile Learning*

Introduction

The changing educational landscape due to the health crisis (i.e., COVID-19 pandemic) experienced worldwide, pushed for embracing the concept of digitalization. Although this concept of digital and online education is no longer new as this has proliferated years ago, the COVID-19 outbreak has opened doors of opportunities for testing the myriad of technology along with the educational digital tools that can be integrated into learning.

Mobile learning (m-learning) offers affordances in distance learning education. With the sudden educational situation that schools were put into, educational institutions were left with no choice but to embrace mobile learning. This is because, mobile learning is the most suited option for students' distance learning, given its features that promote independent learning. It has been highlighted by Gryzun and Tokariev (2023) that there has been an amalgamation on the efficient and effective use of mobile learning in educational institutions by several scholars. Further, they revealed that the portable feature of mobile devices, makes it more effective in learning the lessons. Further, several studies (e.g., Alkhateeb & Al-Duwairi, 2019; Demir & Akpinar, 2018; Pechenkina et al., 2017) have proven the educational benefits of mobile devices to students learning and satisfaction.

Mobile learning is defined as the utilization of mobile devices including smartphones, tablets, and hand-held devices in facilitating learning. Kumar (2023) stressed that it is utilized to assist students in accessing content, resources, and tools for educational purposes while moving away from the time and place constraints imposed in the traditional classroom.

It has been empirically proven that with the appropriate integration of digital tools in mobile learning, successful teaching and learning would occur. However, with the myriad of digital tools available, educators are left with a myriad of choices as well of what to utilize inside the classroom. Thus, poses a challenge as to what would fit best in the classroom environment. To solve this dilemma, the education practitioners led towards the utilization of learning objects (LOs).

Learning objects are defined as self-contained and reusable chunks of digital learning resources that are utilized digitally in various learning contexts to support learning (Amane et al., 2023; Méndez, 2017). LOs include photos, videos, quizzes, assessments, and other digital materials sourced from the internet. It has been empirically proven by various scholars the effectiveness of LOs in educational contexts. Thus, the proliferation of studies conducted in different areas including Mathematics (e.g., Santos et al., 2018; Wong, 2022), Science (Mallidis-Malessas et al., 2022), and Engineering (e.g., Onofrei & Ferry, 2020). However, despite the wide range of areas explored, there have been limited studies that explored LOs in English. Hence, this study is set to bridge the said gap as this will be focusing on LOs for English.

This study aimed to evaluate the customized mobile application that is comprised of learning objects, which is personally developed by the researcher. The evaluation of learning objects is highly needed before the roll-out to the target users to ensure that it serves its purpose. Hence, the main goal of this study.

Methodology

The study employed a quantitative, descriptive-evaluative research design. The descriptive-evaluative method of research was used to evaluate LOs in the mobile application in terms of three constructs: (1) learning, (2) quality, and (3) engagement. The mobile application was personally made by the researcher to improve the grammar performance of the students. The study was conducted in a public secondary high school in the Quezon Province. The respondents were comprised of 31 students. These respondents all owned an Android mobile phone and utilized the mobile application created by the researcher. The Learning Object Evaluation Scale for Students (LOES-S) of Kay and Knaack (2008) was adapted for the evaluation of the mobile app. The LOES-S has been used widely for the evaluation of the learning objects (e.g., Haughey and Muirhead, 2005; Kay and Knaack, 2007), the reason why the researcher opted to adopt the tool. This evaluation scale is composed of twelve (12) general statements about the learning objects in terms of (1) learning, (2) quality, and (3) engagement. All the data gathered data were analyzed statistically using the weighted arithmetic mean to evaluate the respondents' views and experience on using the learning objects in terms of: (1) how much they learned (learning construct), (2) the quality of the learning objects (quality construct), and (3) how much they were engaged with the learning objects (engagement construct).

Results and Discussion

The learning objects were used and evaluated by Grade 7 students to know their views and learning in the LOs of the mobile application in terms of: (1) how much they learned (learning construct), (2) the quality of the learning objects (quality construct), and (3) how much they were engaged with the learning objects (engagement construct). The presentation below shows the evaluation made by the respondents after experiencing mobile learning with LOs.

Evaluation of the Learning Objects in Terms of Learning

The following table and discussion reflect the respondents' evaluation in terms of learning. Table 1 displays the evaluation of LOs in terms of learning with 5 indicators. The overall weighted arithmetic mean of 4.55 means that the students confirm the positive benefits of using LOs in learning the lesson. These findings conform the claims of several scholars on how LOs support the learning of the students.

Table 1: The evaluation of the learning objects in terms of learning

Statements	SA (5)	A (4)	N (3)	D (2)	SD (1)	Mean	Interpretation
1. Working with the learning object helped me learn.	17	14	0	0	0	4.55	Strongly Agree
2. The feedback from the learning objects helped me learn.	16	15	0	0	0	4.52	Strongly Agree
3. The graphics and animations from the learning objects helped me learn.	16	15	0	0	0	4.58	Strongly Agree
4. The learning objects helped me teach a new concept.	18	13	0	0	0	4.58	Strongly Agree
5. Overall, the learning objects helped me learn.	18	13	0	0	0	4.52	Strongly Agree
Overall Mean						**4.55**	Strongly Agree

Note: 1.00 – 1.80 Strongly Disagree (SD), 1.81 – 2.60 Disagree (D), 2.61 – 3.40 Neutral (N), 3.41 – 4.20 Agree (A), 4.21 – 5.00 Strongly Agree (SA)

The table further shows that all five (5) indicators under learning fall in the strongly agree qualitative index, where indicator 3 and indicator 4 gained the highest weighted arithmetic mean of 4.58 with a qualitative index of strongly agree (SA). Indicator 3 states *"The graphics and animations from the learning objects helped me learn."* This

supports the findings of the study of Dumitrica and Jarmula (2022) that students showcased "learning how to learn" as they became motivated because of increased self-regulation. On the other hand, indicator 4 states that *"The learning objects helped me teach a new concept."* It transpires that with the learning objects, the respondents not only learned the lessons but they were also able to transfer what they have learned by teaching the new concept to their classmates or peers.

Evaluation of the Learning Objects in Terms of Quality

The respondents' evaluation in terms of quality is reflected in the table and discussion below. Table 2 lists the evaluation of the learning objects in terms of quality in 4 indicators. The overall weighted arithmetic mean (WAM) is 4.56 which falls under the strongly agree (SA) qualitative index. It explicates that the students see the quality of the learning objects in the mobile application.

Table 2: The evaluation of the learning objects in terms of quality

Statements	SA (5)	A (4)	N (3)	D (2)	SD (1)	Mean	Interpretation
1. The help features in the learning object were useful.	17	14	0	0	0	4.55	Strongly Agree
2. The instructions in the learning objects were easy to follow.	17	14	0	0	0	4.55	Strongly Agree
3. The learning objects were easy to use.	15	16	0	0	0	4.52	Strongly Agree
4. The learning objects were well-organized.	12	19	0	0	0	4.61	Strongly Agree
Overall Mean						**4.56**	**Strongly Agree**

Note: 1.00 – 1.80 Strongly Disagree (SD), 1.81 – 2.60 Disagree (D), 2.61 – 3.40 Neutral (N), 3.41 – 4.20 Agree (A), 4.21 – 5.00 Strongly Agree (SA)

Indicator 4 which states that *"The learning objects were well-organized,"* obtained the highest weighted arithmetic mean of 4.61 with a qualitative index of strongly agree (SA). This implies that the respondents recognized the organization of the learning objects in the mobile application that they have utilized. This result is anticipated as during the development of the LOs, the researcher organized them following the design intended for LOs. According to Kay and Knaack (2007), the organization of the LOs is fundamental because it gives direction to the learners. With the clear direction that the learners are seeing, it leads to meaningful learning.

Evaluation of the Learning Objects in Terms of Engagement

The respondents' evaluation in terms of engagement is reflected in the table and discussion below. Table 3 presents the evaluation of the learning objects in terms of engagement with 3 indicators. The overall weighted arithmetic mean of 4.68 has a qualitative index of strongly agree (SA), which indicates that the students were engaged in learning because of LOs. This conforms to the results of the study by Onofrei and Ferry (2020) on the positive effect of LOs on the learning behavior, engagement, and retention of knowledge of the students.

Table 3: Evaluation of the learning objects in terms of engagement

Statements	SA (5)	A (4)	U (3)	D (2)	SD (1)	Mean	Interpretation
1. I liked the overall theme of the learning objects.	21	10	0	0	0	4.68	Strongly Agree
2. I found the learning objects motivating.	20	11	0	0	0	4.65	Strongly Agree
3. I would like to use the learning objects again.	22	9	0	0	0	4.71	Strongly Agree
Overall Mean						**4.68**	**Strongly Agree**

Note: 1.00 – 1.80 Strongly Disagree (SD), 1.81 – 2.60 Disagree (D), 2.61 – 3.40 Neutral (N), 3.41 – 4.20 Agree (A), 4.21 – 5.00 Strongly Agree (SA)

As seen in the table, indicator 3 which states that *"I would like to use the learning objects again"* got the highest mean of 4.71 with the qualitative index of strongly agree (SA). This means that the respondents found the learning objects useful and enjoyable that they would like to use them again.

Table 4 shows the evaluation of the learning objects revealed by the respondents. Among the 3 indicators, the engagement with the weighted arithmetic mean of 4.68 falls in the qualitative index of strongly agree (SA) and garnered the highest weighted arithmetic mean. This means that the learners found the learning objects engaging. This result has

been validated by several studies on learning objects that highlighted the interactive features of LOs as something that drives learners into successful learning experiences. One study was conducted by Mason et al. (2005) who emphasized that LOs provide engaging digital materials which stimulate intense learning.

Table 4: The summary of the learning objects evaluation

Indicators	n	Mean	Interpretation
Learning	31	**4.55**	Strongly Agree (SA)
Quality	31	**4.56**	Strongly Agree (SA)
Engagement	31	**4.68**	Strongly Agree (SA)
Overall Mean	**31**	**4.60**	**Strongly Agree (SA)**

Conclusion and Recommendation

This study unveils the students' evaluation of the mobile app comprised of learning objects in terms of three (3) constructs (i.e., learning, quality, and engagement). Though the results showed great acceptance as far as evaluation is concerned, the study recommends focusing on improving more the "learning" aspect of the learning objects, given that it gained the lowest evaluation among the three LOs indicators. Teachers may focus more on integrating interactive and detailed feedback in the activities of the LOs to help students learn more about the lesson, since under the "learning aspect" this feature got the lowest evaluation.

Generally, with the positive responses of the learners on the mobile-assisted grammar learning with learning objects, teachers may aspire to utilize learning objects to support their students' learning. They can explore numerous materials available on the web which can be converted into learning objects and may be produced for the use of learners and teachers. Teachers can be trained to use software applications (e.g., eXeLearning, apps geyser) to create their own customized teaching materials. In this way, teachers, even those with inadequate computer skills, may be guided and assisted in developing LOs for their lessons. Just like what the researcher did, with the help of the mentioned software applications, the teachers would be guided on how they can easily combine images, text, audio, and video and create LOs for their students' use.

The school may identify and establish appropriate technical and system infrastructure to expedite the uptake of LOs in schools. In doing so, the school administrators may provide substantial and sustained programs for teachers to develop awareness and competence in learning objects. This is to encourage and facilitate uptake that would support the development of skills and strategies on LOs. A substantial and sustained support program should be provided for teachers and school administrators to develop awareness of learning objects. This is to promote and enable uptake that will support the development of skills and strategies for their classroom use. Learning Objects in this study was developed to teach a Grammar lesson. Therefore, the impact of LOs on other subjects can also be investigated for further research. Additionally, the relatively small sample size covered by this study (thirty-one respondents) is acknowledged as a limitation. Hence, further research which will comprise a larger number of respondents can be conducted to validate the findings of this study.

Contributions of Authors

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Conflict of Interests

The author declares that she has no conflicts of interest.

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