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Effectiveness of the AngoLingo Mobile Game Technology in English Language Learning in Adamson University Basic Education Department

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ABSTRACT

Technology is gradually shifting the focus of learning to less traditional methods; like eBooks, audiobooks, and more recently, mobile applications. This shift indicates an apparent need to incorporate entertaining components into learning tools to keep users engaged in critical thinking, and comprehension activities. There is untapped power in mobile entertainment, particularly mobile games that can and must be harnessed to improve current methods, and even introduce new methods of learning English. This study seeks to determine the effectiveness of AngloLingo, a mobile game that is built on the basics of English, in facilitating learning of English vocabulary, spelling and grammar in students in the Basic Education Department of Adamson University, Philippines. A control group (N=18) and an experimental group (N=18), were used during the test. Quasi-Experimental Research Design with pretest and posttest was used to determine the difference in performance between the control and experimental groups. Results indicate a significant improvement in performance on the post-test of the experimental group due to the use of AngloLingo before administration of the posttest. The overall results of the three sub-tests (P-Value = 6.39E-08) indicate the effectiveness of AngloLingo in learning Basic English vocabulary, spelling, and grammar. This study also offers recommendations on the incorporation of mobile games in teaching and learning Basic English.

Keywords **–** English language learning, mobile game, Basic English, vocabulary, spelling, grammar.

INTRODUCTION

According to statista.com (2017), there are 1.5 billion people in the world who speak English. Though a large number of these English speakers come from developing countries, there is still a dire need for increased English literacy in

these countries. For instance, Baleghizadeh and Oladrostam (2011) stated that most Iranian EFL learners in the setting where their study was conducted, have accuracy problems while speaking. Even more is Computer Aided Instruction, as stated by Jere-Folotiya *et al.* (2014) is a relatively new practice in most African countries. Such could be said about other developing countries in other parts of the world. However, according to Julsrud, and Roldan (2014), Asia and Africa are the leaders in the increasing numbers of mobile phones in the world. Hanz (2011) mentioned that the use of mobile phones is heavy in almost every activity of business, particularly, in developing countries where it is more obtainable to get access to a mobile phone than a computer.

Basal, Yilmaz, Tanriverdi, and Sari (2016) speak of emerging technologies like mobile phones leading to a quick rise of studies that explore their use in education. On the other hand, Liu et al. (2014) indicated that while there may be considerable enthusiasm for using mobile devices to support learning, there is undoubtedly a paucity of research evidence about whether such mobile technology can facilitate learning, particularly, the English Language Learners. This paradigm shift is inevitable, with education on the possible incline to the adoption of these emerging tools. In no distant future, the majority, and sooner or later, the entirety of instructional or learning tools will be premiered on mobile platforms. Under the auspices of mobile devices, is mobile entertainment. Mobile devices have numerous distinctive features such as individualized interfaces, instant communication, and feedback. Lan (2014), points out that these features enhance the effects of some pedagogies, such as self-directed learning, inquiry learning, or formative assessment. The nuances of these components of mobile devices, and the plethora of ways in which they can be exploited to create effective learning platforms and experiences can and should not be ignored.

Though traditional methods of instruction and learning have not necessarily failed, it is expedient that more diversified methods be introduced, while those that are becoming obsolete be abandoned. Yolageldili & Arikan, 2011, state that it cannot be overemphasized that language learning is a challenging task requiring constant effort especially for young learners. Thus, it is an inescapable responsibility to continually seek to discover newer and more potent learning methods by utilizing the materials available. Richards and Rogers (2014), insist that learners learn in different ways because the strengths and weaknesses of every individual are not the same. Therefore, teaching needs to take into account these differences and seek out different and befitting methods by laying emphasis on developing the student's awareness and use of new learning strategies.

As time progresses, these new learning strategies must include mobile games. Wong and Looi (2011) set out to determine the influence of mobile devices on seamless learning; where students can learn whenever they want to learn, in a variety of scenarios, plus the freedom to switch from one to another easily and quickly. Frohberg, Goth, and Schwabe (2009) stated that teachers control most learning activities that involve mobile devices, with there being only a few of these activities or tools centered on the learner. Thus, this study sought to highlight the necessity of filling up the void in educational tools that learner-based learning tools should fill.

The most significant motivation to first, develop this application, and subsequently, through this study, determine its effectiveness in Basic English learning is the low number of mobile game platforms that are intended for educational purposes; these games make up merely 8.8% of Android mobile games, as reported by statista.com (2017), with less than enough specifically developed for English language learning. Furthermore, a majority of these English learning games either focus on a specific area of English language with a majority of them being confined to vocabulary, or spelling, and often leave grammar out, or do not adequately utilize the entertainment factor, thereby making them appear uninteresting and engaging to a less streamlined user base. Nagalingam and Ibrahim (2015) buttress this fact in a study aimed at reviewing the elements of the user experience of educational games, stating that fun was not given adequate attention as most researchers only focused on the other elements of gameplay, and neglected fun which is an essential factor of user engagement.

In this study the quasi-experimental research design with pretest and posttest was used to determine the effectiveness of AngloLingo in the learning of English. It is the hope that this study will motivate further research into the harnessing of the power in mobile game entertainment, and channel it towards the development of more mobile games aimed at all encompassing English language learning.

OBJECTIVES OF THE STUDY

This study sets out to determine the effectiveness of AngloLingo in improving the knowledge of the pillars of English language; speaking and writing through vocabulary, spelling, and grammar of select students in the Basic Education Department of Adamson University, Philippines.

METHODOLOGY

Research Design

The study used quasi-experimental research design to determine the effectiveness of using the AngloLingo mobile game in aiding students to speak better English at the Basic Education Department of Adamson University, Philippines. The Two Group Control Group Pretest-Posttest Design model was employed in carrying out this study. The hypothesis is that AngloLingo is an effective tool in learning Basic English for the study participants.

Research Site

The site of this research is Grade 6 Saint Lorenzo Ruiz of the Adamson University Basic Education, Philippines.

Participants

Thirty-six students from a grade six class of the Basic Education Department of Adamson University were the subjects of this study. The majority of which have English as a second language. With 12 years as the average age, they conveniently fall within the target group who are intended to use this application. The participants were randomly divided into two groups; a control group that consisted of 18 subjects, and the experimental group of equal size. Only the experimental group were exposed to use of the AngloLingo mobile game.

Instrumentation

The game composes of 3 sections; Vocabulary, Spelling, and Grammar. The Vocabulary section consists of one hundred (100) words, whose definitions were taken from merriam-webster.com dictionary. The Spelling section consists of 100 words, also taken from the merriam-webster.com dictionary. The Grammar section of the game is composed of 60 sentences, developed under the direction of A Practical English Grammar (Thomson & Martinet, 1981).

The data collection tool was a 50 question test consisting of 20 vocabulary questions, 15 spelling questions, and 15 grammar questions. A senior English professor from the Adamson University Languages department facilitated the establishment of the internal validity of the test. This test was administered as the pretest and posttest. The Single Factor Analysis of Variance was used to determine the statistical significance of the differences between the two groups.

Procedure

The pretest consisting of vocabulary, spelling, and grammar questions drawn from the contents of the game was administered to both groups. The results of the pretest show that the knowledge level of both groups had similar knowledge of Basic English. The control group had a mean score of 44%, while the experimental group had an average score of 43%.

After administering the pre-test, the experimental group subjects were asked to take out their mobile phones, receive the AngloLingo game via a wireless file transfer service, and install the game.

There are three sections of the game – Vocabulary, Spelling, and Grammar, with three difficulty levels – Beginner, Intermediate, and Advanced. The Vocabulary section displays a definition of a word, and offers the user four options to select the correct answer from. If the user gets it right, a point is added to the user's score, and additional time is added to the timer which is constantly counting down to zero. If the user gets the answer wrong, the correct answer is displayed momentarily, before moving to the next question, with no added score or time. The Spelling game displays the image of an object, offers the user 10 letters which contains the spelling of the word, and requires the user to spell out the word. The same scoring and timing structure as is in the vocabulary game is applied. The Grammar game display a group of randomly arranged words, and requires the user to arrange them in the correct grammatical order. The Grammar game equally follows the scoring and timing structure as both the Vocabulary and Spelling games. All three sections of the game are designed in such a way that whenever the user gets an answer wrong, the correct answer is displayed. With that in mind, the subjects were advised to take note of the correct answers to the questions they got wrong.

After installation, the subjects were directed to run the application, and the supervisor ensured that they spent a minimum of 20 minutes on each of the three sections of the game, and the different difficulty levels available. The treatment period was 60 minutes, which is the average time it took for users of the app to peruse 80% of the content of AngloLingo during the preliminary testing of the game. After that, the post-test was administered.

RESULTS AND DISCUSSION

Vocabulary Test

The vocabulary section of the pretest had a control group mean score of 46%, while the experimental group had an average score of 36%. Reasons for the significant discrepancy between these values which theoretically should be similar cannot be accounted for. However, the most reasonable assumption is to attribute this disparity to random error. In the post-test, the mean score of the control group dropped to 43% while that of the experimental group rose to 48%. Table 1 shows the Analysis of Variance between the control and experimental groups, and the results indicate that AngloLingo was indeed effective in widening the knowledge of English vocabulary of the participants with a highly significant P-value of 0.000101.

Table 1. ANOVA of Control and Experimental Groups in the Vocabulary Test

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*		
Control	18	0	0	0.007353		
Experimental	18	2.2	0.122222	0.006536		
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.134444	1	0.134444	19.36	0.000101	4.130018
Within Groups	0.236111	34	0.006944			
Total	0.370556	35				

Spelling Test

In this test, the pretest mean score of the control group and the experimental group was 48% and 52%, respectfully. These values moderately align with the assumption that both sample groups, being that they were selected from the same environment, and in the same age group, should perform similarly in the test. However, after treatment by use of AngloLingo, the experimental group was seen to have its mean score go up to 66%, while the control group rose by only two units to 50%. Hence, from Table 2, results of the ANOVA between control

and experimental groups in the spelling test, with a highly significant p value of 0.001154, indicates that AngloLingo was effective in helping the participants improve their knowledge on the correct spellings of English words.

Table 2: ANOVA of Control and Experimental Groups in the Spelling Test

SUMMARY						
Groups	*Count*	*Sum*	*Average*	*Variance*		
Control	18	0.466667	0.025926	0.007916		
Experimental	18	2.6	0.144444	0.012157		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.12642	1	0.12642	12.59624	0.001154	4.130018
Within Groups	0.341235	34	0.010036			
Total	0.467654	35				

Grammar Test

From 15 grammar questions, the mean pretest score for the control group was 40%, and the average post-test score was 45%. The experimental group, on the other hand had a mean pretest score of 40% and a mean posttest score of 54%. Table 3 results analysis indicate a significant effect of AngloLingo on the posttest scores of the experimental group. Thus, being an significantly effective English grammar learning tool, with a P-value of 0.014661.

Table 2: ANOVA of Control and Experimental Groups in the Spelling Test

SUMMARY						
Groups	*Count*	*Sum*	*Average*	*Variance*		
Control	18	0.933333	0.051852	0.007611		
Experimental	18	2.4	0.133333	0.010458		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.059753	1	0.059753	6.614148	0.014661	4.130018

Within Groups	0.30716	34	0.009034
Total	0.366914	35	

Overall Test

The pretest mean score of the control group was 44%, while that of the experimental group was 43%. The posttest mean score for the control group was 46%, while the experimental group was 56%. Table 4 displays result analysis of the overall test.

Table 4: ANOVA of Control and Experimental Groups in the Overall Test

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Control	18	0.466667	0.025926	0.001529
Experimental	18	2.4	0.133333	0.002861

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.103827	1	0.103827	47.3019	6.39E-08	4.130018
Within Groups	0.07463	34	0.002195			
Total	0.178457	35				

Considering that data collected, and results of the analysis, it is evident that AngloLingo is indeed an effective tool for learning the English language. In a study carried out by Yolageldili and Arikan (2011), it was found that 90% of the teachers involved in the study agreed that there is an unconsciousness in the learning of the users while playing the game. Same has been observed in this study. It is apparent that the improvement of the experimental group is directly linked with use of the application. The efficiency on a larger and more practical scale, however, may not be accurately projected from this study due to the numerous variables that may come into play, which presents open issues for further research that thoroughly examines and evaluates the benefits of learning with mobile games (Schwabe & Göth, 2005). Also, the enthusiasm of the various users to use the application on their own stands as another uncertainty

that will affect its effectiveness in the individual user's learning of English. But nonetheless, the study's results suggest that if in fact AngloLingo is regularly used, it can help improve the English of the user. There are a number of other studies with findings that support the findings of this study, one of which, as reported by Miangah & Nezarat (2012), is project MILLEE at the University of California (UC Berkeley), which focused on simple English language skills. They developed games that covered the curriculum of an ESL course, and their findings indicate the emergence of significant learning benefits to the users' basic skills in English.

Similarly, Liu & Chu, (2010), after carrying out a study on the effectiveness of ubiquitous games on junior students' achievement in English learning, concluded that mobile games can deliver better results in learning, as opposed to other more traditional methods. This study hopes to further motivate the publishing of more literature on the effectiveness of mobile games in learning. Holden & Sykes, (2012), assert that this will be best achieved when researchers and educators begin to look beyond traditional classroom instruction and develop experiences that provide knowledge that is not inert and passive.

Table 5: Distribution of Pretest and Posttest scores, with their difference.

Subject	Group	PreOv	PostOv	Difference
1	Control	33%	38%	6%
2	Control	57%	54%	-3%
3	Control	57%	56%	-1%
4	Control	52%	54%	2%
5	Control	47%	51%	4%
6	Control	56%	57%	1%
7	Control	23%	26%	2%
8	Control	38%	38%	1%
9	Control	40%	43%	3%
10	Control	19%	26%	6%
11	Control	34%	29%	-5%
12	Control	52%	58%	6%
13	Control	47%	53%	6%
14	Control	58%	66%	8%
15	Control	45%	51%	6%
16	Control	26%	31%	4%
17	Control	51%	56%	4%
18	Control	48%	43%	-4%
19	Experimental	22%	42%	20%
20	Experimental	36%	53%	18%
21	Experimental	37%	50%	13%

22	Experimental	26%	37%	11%
23	Experimental	38%	64%	26%
24	Experimental	45%	63%	18%
25	Experimental	61%	74%	13%
26	Experimental	57%	71%	13%
27	Experimental	57%	71%	14%
28	Experimental	52%	64%	12%
29	Experimental	54%	72%	18%
30	Experimental	44%	54%	10%
31	Experimental	38%	46%	8%
32	Experimental	48%	57%	9%
33	Experimental	46%	56%	10%
34	Experimental	49%	64%	15%
35	Experimental	41%	47%	6%
36	Experimental	17%	22%	4%

CONCLUSION

The findings of this study add to a larger conversation that has been brewing in recent times, about the gamification of various learning processes. In a study carried out by Enders and Kapp, (2013), where participants were put through gamified eLearning experiences, they found that the participants scored 14% higher in skill-based-knowledge assessments, 11% higher in terms of factual-knowledge, and 9% increase in retention rate; indicating strongly that gamification major aspects of learning.

The significant improvement of the subjects in the experimental group of this study, proves that a gamified environment for learning English is more effective than traditional learning methods, and suggests that more focus be put on said learning method in order to increase the speed and efficiency of learning, particularly in children learners.

The AngloLingo mobile game is available for Android Devices in the Google Play store.

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