RESEARCH PAPER

A Quasi-Experimental Study on the Performance and Attitudes of Pakistani Undergraduate Students towards Hello English Language Learning Application

[1] Wafa Pirzada*   [2] Dr. Shumaila Memon [3] Dr Habibullah Pathan

1. MS Scholar, Mehran University of Engineering and Technology, Jamshoro, Sindh, Pakistan
2. Associate Professor, Mehran University of Engineering and Technology, Jamshoro, Pakistan
3. Director, ELDC, Mehran University of Engineering and Technology, Jamshoro, Sindh, Pakistan

PAPER INFO	ABSTRACT
	With the advancement of technology, more and more avenues of bringing creativity and innovation in language learning have opened up. These exciting advances have given rise to a new field of study within linguistics, termed Mobile Assisted Language Learning (MALL). This paper aims to fill the gap of MALL research in the area of grammar teaching in the Pakistan. Two BS Part 1 classes from University of Sindh, Jamshoro, were chosen for this quasi-experimental study. In total, 62 out of 101 students volunteered to use the *Hello English* application for 2 months, making up the experiment group, and the remaining 39 students were put in a control group. Paired Samples T-Test was run on pretest and posttest results which revealed no significant difference in both groups' performances, proving that Hello English application could not significantly improve students' grammar performance. However, in spite of the lack of a significant difference between the test results, the data gathered through the attitudinal survey showed that students still found mobile application very easy to use and effective in language learning.

Introduction

Teaching As mobile devices continue to introduce exciting and innovative features, teachers and learners are getting introduced to new resources for teaching and learning language skills. Social media applications, games, recorders, cameras and many more functions of mobile phones have the potential of revolutionizing language learning from the traditional teacher-centered language learning experience to a more autonomous student-centered language learning experience.

The historical development of the incorporation of technological devices in language learning has been traced by Chinnery (2006) in the following way: the use of audiovisual recording devices such as reel-to-reel, VCRs and PCs to capture language samples, as well as broadcast devices like phonographs, radios and televisions providing access to authentic speech samples, moving to the development of language learning labs in 1950s, which then moved into the drill-based computer-assisted instruction influenced

by the then popular behaviorist models of language learning, to the start of computer assisted language learning prompted by the popularization of multimedia devices decades later. Finally, the popularization of internet and mobile devices have prompted us into the age of Mobile Assisted Language Learning.

The Terminology

Having discussed the origin of MALL, the next section gives an overview of all the different terminologies that are used within this field of study. The terminology in the field of MALL is varied. Many researchers have given different names to seemingly similar concepts:

E- Teaching

Bjekić. Et al, (2014) defines this term to include any kind of learning or teaching task which is mediated through electronic devices like mobile phones, tablets, computers, recorders, et cetera, or information-communication technology tools like the worldwide web, emails, messaging services like SMS and MMS and so on. Use of any or all of these devices in teaching would come under the label of e-teaching.

E- Learning

In a similar vein to how e-teaching was defined above, e-learning is defined by Brandon Hall (as cited in Assareh, & Bidokht, 2011) as including the use of internet services like websites, social media networks, mobile applications and so on, and the use of multimedia tools like CDs and DVDs, in the process of delivering or receiving language instruction. In this way, e-learning and e-teaching are both fairly similar concepts but with different terminologies.

M- Learning

According to O'Malley et al. (2003), the term m-learning applies to any learning situation where the learner is not bound to a learning space like a classroom. Instead, the learner is aware of the learning pathways that are opened up by mobile devices and uses these services in order to make their learning more autonomous. Moreover, due to convenient access and use of these mobile devices, m-learning is said to have opened up new ways of learning and teaching that are not "possible with other media" (Kukulska-Hulme & Traxler, P. 01, 2005).

Mobile Assisted Language Learning

The distinction between the terms m-learning and mobile assisted language learning has been drawn by Kukulska-Hulme & Shield (2008) who has referred to the process of learning a language through mobile based tools as "m-learning" and has referred to the field of study that studies the incorporation of mobile devices in language learning as "MALL". However, this distinction is only based on one researcher's understanding whereas through reviewing the literature, it was observed that many linguists used these two terms interchangeably.

Smartphone Assisted Language Learning

The newest term is "Smartphone Assisted Language Learning" which Lies et al. (2015) has used interchangeably with MALL. All these terms focus on benefits that mobile devices provide to the field of language learning.

Technology Enhanced Language Learning

Walker & White (2013) argue for the use of the term Technology Enhanced Language Learning (TELL) for this field of study, as the term 'technology' is broader than the term 'computer' and it implies that "technology does not merely assist language learning, it is one of many areas in which language exists and is used" (p. 73).

All these above terms have two variables in common: 1) electronic devices of any kind, 2) used for the purpose of language learning. A careful look at all these similar sounding terms and their overlapping definitions would reveal that researchers still seem to be working on developing a proper set of terminology for the field of MALL. Within Pakistan as well, use of technology in language learning is still in its early stages and there is a need for more research and experimentation in this area, which is a gap that the present study aims to fill.

Literature Review

Ever since the development of mobile technology and emergence of MALL, over 700 research studies have been published in this area, and many review papers have been published exploring the trends and the gaps in the research area of MALL. Chinnery (2006), Kukulska-Hulme & Shield (2008) and Burston (2014) are the 3 most extensive reviews on MALL in the field thus far (Burston, 2015).

Research shows ample evidence that mobile technology works effectively in teaching vocabulary, grammar and spelling, along with promoting positive attitudes among students towards their attitude and confidence (Kamasak et al., 2021, p. 196). Review of MALL studies dating from 2015 to 2019 highlight the following benefits of MALL: increasing learner motivation especially in informal settings, promoting learner autonomy, increasing learners' confidence level and providing additional assistance to low-scoring students to reach their study goals (Kacetl and Klimova, 2019).

Much of the research and experimentation in the field of MALL studies has been done on one of the three following areas: vocabulary, grammar and attitudes. A detailed overview of these areas is given below:

Vocabulary Based Studies

Vocabulary is one area of language that is perhaps most suited for the mobile interface as it requires fun and creative ways of drilling information. Which is why it comes as no surprise that the language area in focus of numerous MALL studies has been largely vocabulary. A meta-analysis review of 16 vocabulary related MALL studies, involving 986 participants was conducted by Mahdi (2018). The analysis showed that mobile devices by and large were positively linked to greater success in vocabulary acquisition as compared

to traditional ways of learning vocabulary. This review also concluded that adult learners benefit more than young learners in acquiring vocabulary items through mobile devices.

Grammar Based Studies

Grammar is an area of language that could be taught through many different language teaching methodologies and requires intensive input given and output taken from students. This could be the reason that developing mobile applications for teaching grammar has proven to be difficult, resulting in a small number of applications developed thus far for improving this area. The scarcity of research experiments involving MALL for improving grammar could also be linked to this reason.

Smith & Wang (2013) conducted a research project to determine whether students were ready to learn grammar and reading skills on their mobile devices by investigating what kind of material was appealing to them and what factors encouraged and discouraged them while learning these 2 skills through their mobile phones. Another grammar-based MALL study was conducted by Baleghizadeh & Oladrostam (2010) where it was observed that students who use mobile phones to record and review their grammar performance on mobile phones were more likely to perform better on grammar tests.

Attitude Based Studies

In addition to studies being carried out to explore the technological and educational factors of MALL, psychological factors such as learners' perceptions, attitudes and intentions toward MALL are also being explored in research currently. Leis et al. (2015) studies the effects of using MALL on students' attitudes in a language classroom and how does the use of these devices impact students' private study time outside of classroom. Moreover, the effect of gender difference on students' attitude towards MALL was explored in a study by Hilao & Wichadee (2017) which revealed that people of different genders did not have any significant differences in their attitudes regarding the usage of mobile devices in language learning.

Attitudes regarding MALL have also been explored on the basis of cultural differences in a study conducted by Viberg & Grönlund (2013) where attitudes of students from Sweden and China were compared to see if there was any difference among them, and if so, what factors were contributing to these differences. The results revealed that culture was not a driving force behind change in attitudes towards MALL.

The current study also falls under two of these popular study areas within this field, the grammar study area and the attitudes study area.

Research on MALL in Pakistan

The next section discusses the trends and development in MALL studies within the context of Pakistan where MALL research and implementation is still in early stages. Through the review of literature, it was observed that most researchers of this area tend to focus their attention the perceptions that learners and teachers have towards the use of mobile devices in learning of English as a foreign language. Ali et al. (2019) explored student perceptions regarding mobile usage inside the classroom in their quantitative

study. 60 intermediate students from Lahore, Pakistan, were selected as the study population. The questionnaire items of this study focused more on the ease and the convenience that mobile phones provide as language learning resources. The results revealed that students found mobile applications quite easy and comfortable to use and especially motivating in comparison to orthodox methods like books and lectures.

One particular study stood out while reviewing the literature of MALL studies in Pakistan. This study, conducted by Ali et al., (2018) explored the use of mobile resources in teaching of grammar to students. The researcher engaged students in learning through the platform on WhatsApp application where students from the experiment group were gathered daily for 1 hour, the teacher would engage students in learning and practice of present and past tenses. This study revealed that students highly enjoyed this new experience of grammar learning and their performance on a grammar test improved as well. However, this study left the gap of using a language learning application specifically designed for teaching grammar as the language teaching in this experiment was carried out by the teacher, juts on a mobile platform. This is the gap that will be addressed in this study.

Through the review of literature on MALL studies in Pakistan, it was observed that studies were limited greatly to the exploration of attitudes and perceptions of teachers and students. The reason for this could be the unfamiliarity of mobile phones as learning tools especially in academic settings. In Pakistan, MALL is yet a relatively new and unfamiliar phenomenon which is why the researchers are still focusing their attention on perceptions regarding its implementation. However, more research is required on the actual implementation of MALL in language learning context, whether that in inside or outside the classroom. Mobile devices have opened up a new, creative dimension to language learning which needs to be explored by Pakistani language learning and research context.

Research Questions

For the present study, following questions were explored which aim to measure the efficacy of *Hello English* mobile application in teaching English grammar:

1. How far is *Hello English* efficient as a tool in improving grammar skills of English language learners at undergraduate level in Sindh, Pakistan?

2. What are the attitudes of English language learners towards the effectiveness and usefulness of *Hello English* as a language learning tool at undergraduate level in Sindh, Pakistan?

Materials and Methods

The research design implemented to explore the research question of this paper is quasi-experimental research design which is used "to test descriptive causal hypotheses about manipulable causes to support a counterfactual inference about what would have happened in the absence of treatment" (Cook et al., 2002, p. 14). Two groups that are selected for the experiment need to be "as similar as possible in terms of baseline (pre-intervention) characteristics" (White & Sabaral, 2014). One group is introduced to a treatment (experiment group) while the other is not (control group) and the difference in

their performance is measured through conducting pretest and post-test on both groups. Based on whether or not a significant difference is observed in the results of both groups, the research hypothesis can be proven or disproven.

Within the quasi-experimental research design spectrum, there are several specific designs that lend themselves to different experiments. For the current study, the non-equivalent control group design was used which is where "the control group and the experimental group do not have pre-experimental sampling equivalence, but rather that the groups constitute naturally assembled collectives such as classrooms, as similar as availability permits" (Campbell & Stanley, 1959, p. 47).

Participants and Sampling

Due to this experiment being related to mobile phones and having consistent and strong internet access, only those students who could afford to rely on these resources for the course of the experiment were asked to volunteer. The sampling technique used in this study was "Convenience sampling". This technique is a "nonrandom sampling where members of the target population that meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the purpose of the study" (Dörnyei, 2007).

The participants of this experiment were two first year graduate classes, from department of Physiology and department of Statistics, at University of Sindh, Jamshoro. Both classes were taught by the same teacher for the course of the 2-month experiment period. There were 62 participants in the Physiology class, 30 of which volunteered to participate in the experiment group and 20 opted for the control group whereas 12 students refused to participate in the experiment altogether. Similarly, from the department of statistics, 32 out of total 61 students volunteered to participate in the experiment group and 19 opted for the control group whereas 10 students refused to participate in the experiment altogether. In this way, the total number of participants in the experiment group from both departments was 62 and the total number of students in the control group from both departments was 39, 101 participants in total.

Instruments

This section gives a brief introduction to all the instruments that were used to gather data in the present research study.

Grammar Tests

First instrument were the two grammar tests that were used in pretest and post-test of control and experiment groups. These tests were developed by the researcher through mixing of test items from Common European Framework of Reference for Languages (CEFR) proficiency tests. CEFR is a language testing framework developed to elaborate language learning material, syllabus, curriculum and tests on a common, standardized base, defines the context of language learning, the skills needed to perform language in a communicative way, as well as to introduce levels of language proficiency by which learners' language skills and progress can be measured (Council of Europe, 2001).

There are six levels of English proficiency according to this model: A1, A2, B1, B2, C1 and C2, which are further divided into 3 categories of "basic", "independent", and "advanced user". The pretest consisted of twenty grammar questions, five items taken from A1 level, five items from A2 level, five items taken from B1 level and five items taken from B2 level. Moreover, in order to authentically measure any increase in the grammar performance of the students' posttest, the same pattern was followed in devising the grammar test for posttest with twenty grammar question, five from each of the first four levels of the CEFR framework. These grammar tests are attached in the appendix section at the end.

Language Learning Application (Hello English)

For the present study, the mobile application selected goes by the name of *Hello English. Hello English* was developed by two Indian application developers, Nishant Patni and Pranshu Patni, in 2014, which was the rebranded version of a previously released but much less successful application by them called "Culture Alley" (Agarwal, 2020). Today, this application has over 10 million downloads on Google Play store and over 50 million users all over the world.

More than the impressive application statistics, *Hello English* was used as a tool in this experimental study because it was the only popular English language learning application that offered language instruction from Urdu, Pakistan's national language, to English. In fact, *Hello English* is the only application on the market that offers English language instruction in 23 different vernacular languages of the South-East Asian region like Hindi, Urdu, Bengali, Bhojpuri, Punjabi, on top of offering lessons in other international languages like French, Chinese, Malay and so on.

Attitude Survey

The attitudes that the participants had towards the incorporation of *Hello English* in their language learning was measured through two instruments. The first was an attitude survey that was adapted from the study of Chen (2013) which explored the use of tablets in language learning. This survey consisted of three sections: 'usability', 'effectiveness' and 'satisfaction' of mobile devices in teaching English, all having 10 items each. Sharples (2009) defined "usability" and "effectiveness" as 'will it work?' and 'is it enhancing learning?' type of questions regarding MALL, respectively. These categories were further transformed into a set of questions by Chen (2013) in the study led to test the use of tablets in informal language learning. The questionnaire items were reworded from "tablet" to "mobile" to fit the nature of the present experiment. For this study, the sections of 'usability' and 'effectiveness' were explored, hence the survey consisted of twenty items, ten items for each category. The scale used in this survey was a 5-point Likert scale with responses going from strongly disagree to strongly agree.

Data Collection and Analysis

For research question #1, Google Forms online service was used to administer the pretest and posttest. The test links were sent to all the students on their email accounts. The same test was created on two links, one for control group and one for experiment group

just for the purpose of keeping the data sets separate. This was total four test links were created on google form, control group pretest, experiment group pretest, control group posttest and experiment group posttest.

In order to analyze this data, firstly the data from google forms was downloaded in a Microsoft excel sheet where the responses were coded. All the correct responses were coded as 1 and all the incorrect responses were coded as 0. The coded data set was then used in SPSS. All the responses from control group pretest were then combined into a new variable name "PRE_CONTROL" and all the responses from control group posttest were combined into a new variable named "POST_CONTROL". This was done for the purpose of comparing the accumulative means of both sets to examine if there was any significant different between them, hence proving or disproving the hypothesis. The test applied for this purpose was independent samples t-test on SPSS software. And later the same process was applied on the 2 data sets of the experiment group.

For research question #2, two sets of data were collected. First, to gather quantitative data, students were sent an attitudinal survey created on google forms. Again, the links were sent to all students of experiment group on their emails. For the analysis of this data set, the attitudinal survey was downloaded from Google forms into Excel spreadsheet format where the answers were coded and reverse coded where necessary. 5 items in the "usability" section were negatively stated so they were reverse coded at this stage. The coded file was then uploaded on SPSS where descriptive statistics were drawn.

Results and Discussion

This section is divided into two parts, the first part discusses the results for pretest and posttest in the form of tables in the section below. Next, the results of the attitudinal survey are discussed as well.

Research Question #1: Comparing the Grammar Performance of Control & Experiment Group:

The data gathered from pretest and posttest from experimental and control groups were analyzed though SPSS software and independent samples t-test was applied on the mean values of both groups to help identify any significant different in the performance of the 2 groups. The results of Control group are discussed first in the table below:

Table 1
Paired Samples Statistics of Control Group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRE_TEST_CON	11.46	39	3.29	.52
	POST_TEST_CON	13.05	39	3.77	.60

From this table, we can see that from the mean of 11.46 in pre-test, the control group was able to improve their performance to mean of 13.05. However, the result would be considered significantly different if p value is less than 0.5. For this, independent samples t-test was applied on the data, as shown in the table below:

Table 2
Paired Samples Statistics of Control Group

		Paired Differences		t	df	Sig. (2-tailed
		Mean	Std. Deviation			
Pair 1	PRE_TEST_CON POST_TEST_CON	-1.58	5.57	-1.91	38	.06

As p value of 0.06 is higher than p value of 0.5 (0.06 > 0.5), we can conclude that there was no significant difference among the pre-test and post test results of control group. Moreover, the results of experiment groups revealed the following results:

Table 3
Paired Samples Statistics for Experiment Group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRETESTEXP	11.27	62	3.29	.41
	POSTTESTEXP	12.37	62	3.64	.46

In the figure above, we can see that experiment group was able to improve their mean performance of 11.27 in pre-test to the mean score of 12.37 in post-test. However, again by the rules of quantitative analysis, if the p value is less than 0.5 the results are not statistically significant, as shown in below.

Table 4
Paired Samples Statistics of Control Group

		Paired Differences		t	df	Sig. (2-tailed
		Mean	Std. Deviation			
Pair 1	PRE_TEST_EXP POST_TEST_EXP	-1.09	5.27	-1.63	61	.10

This table reveals that the p value for this data set is .10, and since p value of 0.10 is much higher than 0.05 (0.10 > 0.05), the mean difference of this group is also proven to be statistically insignificant. From these results, we can conclude that using mobile application, *Hello English*, for a period of 2 months failed to contribute significantly towards the improvement of grammar skills among Pakistani undergraduate students.

Research Question #2: Students' Attitudes towards 'Hello English'.

To gain insight into the attitudes students had towards the usage of mobile application *Hello English* in their language learning course, a survey containing items relating to *usability* and *effectiveness* of *Hello English* was sent to students. The survey consisted 20 items all using a 5-point Likert Scale.

The usability section asked students their opinions regarding how easy, convenient and flexible *Hello English* was to use and whether they thought that the application was mentally draining to use. From this section, the items gathering the most positive responses were the items "learning to use mobile language learning application was easy", with a mean of 4.14, and "my interaction with mobile language learning application was clear and understandable", which accumulated a mean on 4.02. Items related to the convenience of

using the application also garnered positive reactions, with item number 1 "convenient to use" reaching mean of 3.34, item number 4 "I find it easy to make the application do what I want it to do" reaching mean of 3.46, and item number 5 "flexible to work with" reaching mean of 3.51.

However, the items with the lowest means proved to be those related to the amount of mental effort it takes to use mobile language learning applications. Item number 9 "it doesn't take a lot of mental effort to become good at using mobile language learning apps" has the lowest mean, 2.68, and item number 7 "interacting with mobile language learning applications doesn't require a lot of mental effort" has the second lowest mean, 2.74, indicating that many students disagreed with these statements. In fact, they find that it takes a lot of mental effort to interact with language learning mobile applications and become good at interacting with them.

The next section of the survey measured how effective *Hello English* was in improving English, from the perspective of the participants of the experiment. The mean gathered for all items were fairly consistent showing that students had over all quite positive attitudes towards the effectiveness of the language learning application.

The items gathering the most positive responses were item number 6, "using mobile application improves my foreign language performance" and 5 "mobile language learning apps are a great way of achieving my learning outcomes" with means of 3.97 and 3.93 respectively. Items 1, "using mobile application helps me a lot in language learning" has gathered the 3rd highest mean value in this section, 3.76. Moreover, items 3 and 10 have acquired the exact same mean value of 3.74, showing that students believe that using mobile language learning applications allows them to "finish their leaning tasks quickly" and that these applications are "very useful" in their studies.

The lowest scoring item in this section is item number 7 "mobile language learning application helps me to achieve more tasks than would be otherwise possible" with mean score of 3.44, showing that even though most students agree with this statement, they think that this aspect of mobile phones is a bit weaker in effectiveness than the rest. Same goes for the second lowest scoring item of this section, item number 4 "mobile language learning application helps me in learning language critically" with a mean of 3.46.

Discussion

The results from this experiment showed that there was no statistically significant difference among the pretest and post test results of the experiment group, suggesting that *Hello English* could not significantly improve their grammar performance. Moreover, the results of control group also did not show any statistically different results. These results are consistent with the research carried out by Korkmaz (2010) who used SMS and MMS service as an invention technique in their experiment. Their study revealed that the control group and the experiment group did not have a statistically significant difference in their posttest performance.

However, studies experimenting with the use of different applications in improving grammar, like Throwback Time (Dewi et al., 2020) and Quizizz application (Rozina et al., 2017), showed contradictory results to the present study. Through these applications, the

students in the experiment group showed statistically significant improvement, so it could be hypothesized that *Hello English* was not a suitable application to improve grammar skills in comparison to these aforementioned applications.

There could be various other reasons for the statistically insignificant results of this current experiment. Since both groups failed to improve their grammar performance, it could be hypothesized that the duration of the experiment was too short for any significant improvement in grammar skills to take place. Moreover, the rigid and objective nature of the grammar tests that were used as an instrument to measure the improvement in students' grammar skills could also have hindered the students from showing the improvement in their grammar skills. It is possible that a subjective type test like essay writing could have showed different results. This opens up a new gap in the area of MALL research that future studies may be advised to fill.

Regardless of the lack of improvement being shown on the tests, the survey results showed that the participants had optimistic views towards the usage of mobile applications in learning of the desired language. Students widely reported to have found *Hello English* easy and convenient to use. Students also reported that they view language learning applications as effective in improving their foreign language performance and achieving their learning outcomes. These findings are similar to other studies in the area that explore students' attitudes towards MALL (Ali et al., 2020; Ali et al., 2019; Rashid. 2018).

Conclusion

This study experimented using *Hello English* application to improve the grammar skills of undergraduate students of University of Sindh, Pakistan. Grammar is one area of language learning that EFL students often find difficult to grasp. Especially within ESL classrooms, it can often be observed that students feel uncomfortable with English "and sometimes they feel pressure in their language learning due to the complex grammar rules" (Al-Mekhlafi & Nagaratnam, 2011). When students constantly feel difficulty in learning of grammar, it prompts the teachers to try different strategies and modes of learning in their grammar teaching. This is the reason that something as fun and interactive as mobile applications could make the tedious process of grammar learning easier for students.

The study revealed that participants had very positive reactions towards the integration of mobile applications in their language learning. Students particularly found the *Hello English* application very easy to use and had the view that such an application was really helpful in improving foreign language skills. However, these positive reactions did not translate into better performance on grammar test as the students had failed to show any significant improvement in their grammar skills after the use of *Hello English* for two months. There could be several reasons due to this lack of progress shown on the final test, for instance, the use of MCQ type grammar tests failed to reflect their true language progress, 2 months was not sufficient time for an application to significantly improve language skills or that *Hello English* was not an effective application for the improvement of grammar skills. Changing any or all of these variables could provide much different results, which is the research gap that has been discovered by the present study.

Lastly, it is worth mentioning that the use of MALL in classroom is enthusiastically welcomed by students of Pakistan so researchers and teachers are recommended by the researcher to continue with experimentation of different language learning applications, social media services and other functions provided by mobile devices (voice recording, memos, SMS, MMS, et cetera,) should continue to be explored in Pakistani language learning context.

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