



Impact of Game-Based Instructions on Learning Irregular Verbs at Primary Level in Lahore

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Abstract: The paper aims to investigate the impact of mobile assisted language learning on irregular verbs and in a classroom setting. This research uses Siemen (2005) and Downes (2006) Connectivism as a theoretical framework. This is a quantitative research; to investigate the impact of mobile assisted language learning experimental design with pretest posttest will be used. The data was collected from ten (10) participants in each group; experimental group and control group. This study is significant since it will enable the educational institutions and curriculum designers to incorporate mobile technology in ESL classroom context, this research will also be beneficial for the future researchers of this field to investigate the use of technology in ESL classroom context.

Keywords: Game-based learning, Mobile-assisted language learning (MALL), Irregular verbs, Connectivism, ESL Context

1. Introduction

Technology is rapidly attracting a large number of users with more capacity and influencing cultural practices with new learning contexts (Pachler et al. 2009). Mobile devices have become an essential tool at the educational level other than just communication (Crompton & Burke, 2018). In today's world, almost every person has access to mobile phones (Crabtree, Nathan & Roberts, 2003). Mobile phones have enhanced language learning from traditional methods to technology-based teaching methods (Lehner & Nosekabel, 2002). Mobile-Assisted Language Learning (MALL) is an effective tool for acquiring English as a Second or Foreign Language that provides practice for vocabulary learning and communication skills (Kwon & Lee, 2010). People from around the globe are connected with the emergence of social media apps like Facebook, Instagram, and Twitter that make people learn other languages of their interest for communication purposes. The use of mobile phones is not a substitute for teaching methods, instead, it can serve as an extension for learning a language with new compatibility in a new surroundings, and so with the advancement of technology, we need to change some traditional methods to trending methods that are being taught with the help of technology (Lehner & Nosekabel, 2002). It not only makes learners learn but it maintains the interest level of learners. Game-based learning applications on portable devices i.e. mobile phones offer a new teaching method to motivate learners and regulate self-centered learning (Burston, 2014).

Some factors encourage the use of mobile devices in language learning: small size, handy, input and output

compatibility as well as audio functioning (Lehner & Nosekabel, 2002). It can also be used as any skill regardless of location and time providing information and knowledge based on educational content. This web-based or internet-based learning has created an interactive, interesting, and compatible environment for learners and teachers (Khan, 2005). Learners can learn and teachers can teach using mobile phones, iPads, laptops, and online quizzes/tests and via e-mail. Mobile-assisted language learning (MALL) helps learners to utilize mobile devices in learning a second or foreign language. This is very helpful in increasing one's skills by gathering knowledge from around the world with the help of this wireless technology. Wireless technologies are used in various fields in our surroundings such as learning a language. Mobile learning can be done within a formal or informal setting-in class or outside the class that allows decision-making and interaction between small groups of learners (Cakmak, 2019). It is also beneficial outside the classroom allowing learners to utilize their free time.

A verb is a grammar term and it is an important part of the English language. There are types of verbs that are named irregular or regular verbs. Regular verbs are those which are usual with past and past participles whereas irregular verbs have different past and past participles (Nunes et al.1997). The idea of regular and irregular verbs belongs to second language learning where defining the rules becomes important in learning a foreign language learning. In this paper, researcher discussed EFL learners' learning of Irregular verbs through game-based instruction and learning with the help of mobile phones.

1.2 Purpose of Study

The researcher investigates the impact of mobile assisted language learning on irregular verbs and explore the opinion of students and teachers as well regarding the use of mobile assisted language learning in a classroom setting by primary school ESL learners.

1.3 Objectives of Research

- a) To identify the impact of mobile-based-games on the immediate retention and retrieval of irregular verbs by Pakistani ESL learners of primary level.
- b) To determine the effectiveness of mobile-based-games for ESL learning in comparison to conventional instructions by Pakistani ESL learners of primary level.

1.4 Significance

The study explores the use of technology in teaching Irregular verbs in Pakistan. Traditional methods often result in errors or fails in learning rules for irregular verbs. This study highlights the significance of technology in improving language learning and maintaining learners' interest levels. By integrating technology into classrooms, learners can explore new learning environment, as it is an effective tool for teaching second languages in Pakistan. The current research will help the new researchers in Mobile-Assisted Language Learning (MALL).

1.5 Statement of the Problem

This study is conducted because mastering irregular verbs has become a challenge for learners of the English language (Ranabhat, 2013). There are no specific rules for learning irregular verbs, learners make errors while using past and past participle of irregular verbs such as 'dig' instead of 'dug', 'feeded' instead the 'fed. Traditional teaching methods often fail to engage learners and encourage lasting retention. The reasons are rote learning, drilling, and memorizing which lead to learners' disinterest and restricted opportunities for authentic exercises (Taheri, 2014). Game-based learning e.g. studies by Anyeagbu et al. (2012) that highly motivated utilizing the mobile-based game at the primary level, Grimshaw (2016) found that gaming increased the energy of learners and prepared them to interact in class, Taheri (2014) revealed that the impact of game-based learning on group significantly improved the learners' vocabulary retention. The studies have shown promising results and outcomes.

1.6 Research Questions

- a) What is the impact of mobile-based-games on the immediate retention and retrieval of irregular verbs by Pakistani ESL learners of primary level?
- b) What is effect of mobile-based-games for ESL learning in comparison to conventional instructions by Pakistani ESL learners of primary level?

2. Literature Review

2.1 Mobile-Assisted Language Learning

The history of Mobile Assisted Language Learning began in the 80s through research by Twarog and Pereszlenyi-Pinter (1998) as a language learning organization. They utilized telephones for support and feedback to language learners who were away (Twarog & Preszlenyi-Pinter, 1988). Viberg and Gronlund (2012) highlight the increasing integration of mobile technology in educational systems that enhance learning environment. Mobile devices, such as laptops, mobile phones, tablets, and iPads, offer advantages such as convenience, affordability, and easy access to resources. According to Chartrand (2016), he talks about the advantages of mobile phones such as Multimedia ability, Internet access, Social networking and immediate feedback. The practical use of mobile phones in our everyday lives has given them significant roles in learning a language. The study by Kukulska-Hulme and Shield (2007) showed that Mobile-Assisted Language Learning (MALL) is undergoing rapid evolution. Educators and learners are motivated by the advancement of technology. According to Miangah and Nezarat (2012), mobile learning has become an essential tool for teaching and learning, making education more easy and accessible, especially with the advent of the internet. Wireless technology devices have broadened the new vision for teaching and learning a language in formal and informal settings. Mobile-assisted language Learning is admired by the maximum population for utilizing portable devices where a significant benefit could be grasped (Miangah & Nezarat, 2012).

Mobile-Assisted Language Learning is one of the best sources that supports E-learning to improvise language teaching and learning with the help of these wireless devices. It has been an effective tool when used in a classroom setting. As Saidouni and Bahloul (2018) say handheld devices i.e. mobile phones have a great impact on the way of teaching and learning methods. These devices are influential tools due to their many practical features and easy access to resources for everyone as well as for students. The research by Faozi and Handayani (2023) helps to understand the components influencing the intention to use mobile-based language learning in Indonesian Language courses. The results and findings of the study showed the significance of satisfaction of using MALL that shaped learners' self-regulation ability for language learning. Educational institutions can improve the needs and expectations of learners by understanding these factors. This research improves e-learning giving importance to the factors that influence the use of mobile-based language learning apps, it also helps to understand the behavior of users and supervisory in the setting of e-learning (Faozi & Handayani, 2023).

2.2 Game-Based Learning

Digital Game-based learning encourages learners' involvement within in classroom. It plays an important role in enhancing learner's cognitive skills (Hwang & Wu, 2012). Scholars (e.g. Levine, 2008) have explored instructive potentials and benefits of digital game learning for language learning. It is also a crucial component of language learning because games-based learning can improve knowledge and encourage active participation from learners in their learning. Games enhance learner's language learning by boosting their motivation and reducing stress levels (Levine, 2008). The study by Anyeagbu et al. (2012) revealed that Chinese primary students in an English Foreign Language (EFL) learner preferred game app-based learning rather than grammar-translation methods. The data collected showed that it effectively engaged, motivated, increased interest, and reduced the stress level of learners who were facing difficulties in learning English as a foreign language. So mobile game-based learning is effective and learners nowadays prefer language learning through mobile game apps (Anyeagbu et al. 2012). The study by Grimshaw (2016) explored the impact of digital collaborative mobile game on second language learning. It also investigated its effect on learners' fluency development, speaking anxiety, and willingness to interact or communicate. The study found that gaming increased the energy of learners and prepared them to interact in class, even their teachers noted that gaming sessions not only motivated learners but also created a good and healthy environment. Participants reportedly felt more comfortable. They were more active during normal lectures after remembering the previous vocabulary they had acquired. So game-based learning improves the verbal fluency of language learners and makes them more confident (Grimshaw, 2016).

Roohani and Heidari (2023) also support Mobile-Assisted Language Learning (MALL) as they say that it has the potential for learning English Grammar (Phrasal Verbs). The traditional method was implied in the control group whereas game-based learning and social media were implied in the experimental group. Mobile-assisted language learning was found to be the most effective among all methods. The students showed a positive attitude towards MALL, as they were motivated and attracted by the games. Second Language teachers should incorporate gaming applications into their classroom practice (Roohani & Heidari, 2023). Another research by Koleini et al. (2024) explored the potential of Mobile based language learning to increase university student's vocabulary. The results concluded that the experimental group outperformed which appreciates the potential of mobile-based language

learning in developing a technical vocabulary of learners. This article focused on the English language learners' learning of grammar i.e. Irregular verbs through game-based learning using the *English Irregular Verbs Balloon Games* by utilizing Mobile-Assisted Language Learning (MALL).

Mobile-Assisted Language Learning (MALL) is an effective tool for acquiring English as a Second or Foreign Language that provides practice for vocabulary learning and communication skills (Kwon & Lee, 2010). It enhances English language learning that supports learners' needs and goals to meet the target needs in their English Language courses. Utilizing mobile devices at the educational level has led them to explore technology-based learning in the classroom and beyond (Engel & Green, 2011).

2.3 Irregular Verbs

Regular verbs follow the rules of conjugation which is typical order to form their past, past participle, and future tense forms, whereas irregular verbs do not follow typical order. It could be said that irregular verbs are verbs that do not add -ed, -ied when changed to past tense form. Irregular verbs are also known as strong verbs. Irregular verbs change into different forms of past and past participles for instance see - saw – seen. Irregular verbs could also have the same past or past participle for instance keep - kept - kept (Nunes et al. 1997). The examples help us to understand the difference between regular and irregular verbs when used in past and past participles.

2.4 Theoretical Framework

The term *Connectivism* was introduced by George Siemens (2005) and further, it was focused on by Downes (2006) who stated that globally used technology and the internet have changed the way of sharing, studying, and learning information among learners around the world. Internet and networks facilitate knowledge exchange and scholarly new ideas that lead to cultural and social development Siemens (2005). The incorporation of various technologies including the internet, computers, mobile phones, simulation games, and 3D technologies has significantly supported the learning environment in expanding and challenging our understanding of what constitutes an education or learning setting (Dror, 2008). No one can disagree with the fact that our lives significantly depend on technology as it plays an important role in human societal progress (Nawaila et al. 2020). This study promotes learning Irregular verbs through games within a formal setting. Game app-based learning is an innovative approach to learning a language that utilizes games and mobile technologies to engage learners and promote language acquisition through game design features and technologies that increase students' motivation and engagement. In language learning, especially in the acquisition of irregular verbs, connectivism theory can be used to implement game app-based learning to learn Irregular verbs as they are challenging components in language learning because they do not follow a predictable pattern instead, they must be practiced through repetition. The game in this present study provided access to learn and practice irregular verbs. It offered a diverse range of learning experiences and encouraged learners to learn with focus. It helped learners connect irregular verb rules and exceptions with a deeper understanding and facilitated pattern recognition in irregular verb forms. By applying the principle of Connectivism, it can enhance the learning outcomes for irregular verbs. Connectivism promotes learning through technology as well as the study by Amjad & Haroon (2024) applied the theory of connectivism, according to them technology has become the part of everyday learning. Learners could learn or grasp more knowledge with the help technological learning. This study was based on teaching irregular verbs with the help of the Play Store app *English Irregular verbs Balloon Games*. It helped students to learn irregular verbs with more interest, as Mobile-Assisted Language Learning (MALL) is a new trend that is used in classroom settings in language learning rather than traditional methods.

2.5 Hypothesis

H₁: There is no difference between experimental group's pre-test and post-test.

H₂: There is no difference between the means post-test of experimental and control group.

Research Methodology

3.1 Data Collection

The data has collected in an authentic formal setting that will describe the nature, sample, design and tool of this research to make it more authentic.

3.1.1 Sample and Design

The research has been constructed based on a quantitative method i.e. numeric form. The research design utilized in this study was quasi-experimental design. It was based on pre-tests and post-tests. The experiment was carried out in two weeks. Spss-21 was used to analyze the data for pre and post-tests. The paired t-test analyzed the data for the pre-test and post-test. This research work was delimited to the city of Lahore, the Provincial city of Punjab (Pakistan) due to limited time and resources.

This study aimed to examine the improvement of irregular verbs of the target language (English), learning the language at the primary school level. The data was collected from Students of Allied School situated in Lahore, Pakistan. The participants were the students of class 4, belonging from two different sections. The students were from the beginning of the start of the year. Altogether twenty (20) participants were involved in the study. The majority of learners were more comfortable in their first language i.e. Urdu for communication whereas they were exposed to English via reading and writing. The sections were divided into the control and the experimental group. Each section includes ten (10) participants. The experimental group (n = 10, duration = 2 weeks) and control group (n = 10, duration = 2 weeks). The experimental group was taught through the *English Irregular Verbs Balloon Game* whereas the control group was taught via traditional methods like drilling, and route learning. The data was collected through Pre-test and Post-test. This experimental design which was based on Pre-test and Post-test provided the effectiveness of game-based instruction on learning Irregular Verbs. It also allowed the control over variables to ensure its validity.

3.1.2 Data Collection Procedure

To determine the learning of irregular verbs during instructional time, the Researcher used pre-tests and post-tests in this study. The data was collected in 2 weeks from the learner's two different sections. The section was split into two groups; the Control group and the Experimental group, each group consisted of ten (10) students. A pre-test was conducted which had ten (10) irregular verbs. Students had to write past and past-participle of those irregular verbs within 25 minutes. The researcher was given thirty (30) minutes lecture in both teaching sections. With the permission of the school and parents, students were allowed to bring their tablets. 40 irregular verbs were taught to students out of which 5 words were being taught daily. The traditional method i.e. drilling was used for the control group whereas the Experimental group played games on their tablets within the classroom. There were levels in-game, each level had five (5) irregular verbs with three (3) lifelines. The selected participants played one level each day. After teaching forty (40) irregular verbs post-test was conducted with a similar design as a pre-test. Students were to write to past and past participle in 25 minutes. Both of the groups took an activity, post-test, for the evaluation of the efficiency of the improvement for irregular verbs in an English as a second language ESL classroom. The data was analyzed by checking test papers. The scores obtained by the students were tabulated by using a quantitative method that included statistical tools of percentage.

3.1.3 Ethical Consideration

The Data in this research was fairly collected, and no one was forced to participate. Participants voluntarily participated. The participants were fully informed about the objectives and methods of research. To ensure the privacy and confidentiality of participants, their personal information and data such as their names were kept hidden. Participants were free to opt in and opt out of this study. It did not enforce excessive burden on participants. The time and efforts of participants and the institute are respected. The game-based learning and technology utilized in this research are ethical. The research was conducted with the consent of the institution and participants' guardians. The data collection was done by the researcher and is free of plagiarism

4. Data Analysis

The two different hypotheses will be discussed for the analysis of the data. These hypotheses will be tested via paired t-tests. Their indicated p values will tell us whether the null hypothesis will be rejected or accepted.

4.1 Pre-Test and Post-Test of Experimental Group

Table 1: Paired Samples Test

	Paired Differences					t	df	Sig.(2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Pre-testEXG– Post-testEXG	-19.40000	8.67564	2.74348	-25.60618	-13.19382	-7.071	9	.000

Pre-test and Post-test of experimental group contains mean value= -19.40000 while the value of Std. division is 8.67564 and Std. Error Mean is 2.74348. Overall, 95% Confidence interval of the Difference contains the lower value which is -25.60618 and upper value is -13.19382. Its t scores are -7.071 and df scores is equal to 9, whereas the value of sig. (2-tailed) value is .000. The highly significant value leads to rejection of null hypothesis.

4.2 Post-Test of Experimental and Control Group

Table 2: Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Post-test EXG – Post-0 test CONTG	16.00000	11.37004	3.59552	7.86636	24.13364	4.450	9	.002

Post-test of the experimental group and the control group contains mean value which is 16.00000 while the value of Std. deviation is 11.37004 and Std. Error mean is 3.59552. The lower value and upper value of 95% confidence interval of the difference are 7.86636 and 24.13364. The score of t is 4.450 and df value is 9. The Sig (2-tailed) value is .002 that rejects the null hypothesis.

4.3 Results and Discussion

This paper investigates the learning of irregular verbs through handheld mobile device apps and also the usage of technology in teaching and learning a language.

4.4.1 Pre-Test and Post-Test of Experimental Group

The data analysis reflected that using handheld devices for learning language i.e. Mobile-Assisted Language Learning is very helpful and an effective tool. In current study, the researcher investigated the effectiveness of utilizing mobile app for teaching irregular verbs. The study used pre-test and post-test design to measure learners' knowledge after and before playing a game on mobile phones for learning irregular verbs. There was a great significant difference between the pre-test and post-test that indicates that the mobile app had a positive impact on learners' knowledge of irregular verbs. The learners were motivated and they engaged themselves in learning irregular verbs. Their interest level increased, they enjoyed and had fun during the learning process. Instead of using traditional methods, teachers can teach students with the help of handheld devices that are part of their lives to maintain their interest level. The study emphasizes the importance of using interactive and engaging learning materials in language learning. Language learners are often engaged in learning materials that are interesting, challenging and relevant to their interests.

Many of the participants in this study who were introduced to the gaming app were quiet interested and engaged

themselves in learning as the study by Kessler et al. (2023) showed that Mobile-Assisted Language Learning (MALL) is beneficial in learning the target language i.e. second or foreign language via using mobile phones in classrooms. The apps utilized in the study Kessler et al. (2023) were mobile-based and both helped learn a target language so it proved that Mobile-assisted Language is an effective and helpful tool in learning a language (Kessler et al. 2023). The findings of this research contradict with the research by Chartrand (2016) as it says mobile phones should not be allowed in classrooms as they can be a source of distraction for students or learners, students might spend their time on other things which could stop them from paying attention to learning language in the classroom. Teachers can also be distracted by one student's actions within the classroom which can be a great disadvantage in using technology within the classroom (Chartrand, 2016). But the findings of current study revealed that technology based learning is an extension for teaching method as the study by Lehner and Nosekabel (2002) says the use of mobile phones is not a substitute for teaching methods, instead, it can serve as an extension for learning a language. It depends on teacher how they manage the class to stop learners from distraction.

4.4.2 Post-Test of Experimental and Control Group

The data analysis showed a significant difference between the results of the post-test of the experimental group and the control group. The students in the experimental group were more interested and they participated more than the students in the control group. The game-based instruction helped the learners to learn English irregular verbs. The engagement between handheld devices gaming applications and learners should not be disregarded. The results emphasize the part of active engagement and learners as positive opinion of using technology in classrooms. The game-based application learning of irregular verbs provides a fun, interesting, and engaging environment for the learners. The participants who participated in the experimental group on their own will were so actively engaged with the game-based learning that they wanted to continue playing. The urge to continue playing the game is a hint for students' motivation to learn with the help of games-based applications. The learners of control group were taught with traditional methods. The learners were able to somehow learn but not every learner was active. Using gameplay in the classroom was a unique and new experience for the participants of experimental group, potentially encouraging the interest of participants in learning English irregular verbs. The enjoyable, engaging, and positive classroom surrounding were likely to motivate learners with more learning and less pressure. As the study by Grimshaw and Cardoso (2018) suggests that the enjoyable features of game app help Language learners to ease stress and pressure. The game-based learning can assist and help English language learners in practicing in target language within a fun and pleasant learning environment. This suggests that game-based learning creates an entertaining and engaging learning environment for learners.

This research contradicts the study by Criollo et al. (2018) as it talks about disadvantages, limitations and barriers that negatively impact the use of mobile phones in classrooms. It also says not all applications are user friendly or have authentic learning material. They also mentioned that mobile phones are source of distraction for learners, so it could create problems for the learners learning on mobile phones. The implementation of mobile learning in educational institutes face challenges due to its disadvantages, restrictions, and barriers. This study extends the study by Lukas and Yunus (2021) which says that technology had played an important during the COVID-19 pandemic. It became the mediator of communication which replaced in-person interaction. In the paper, the majority of instructors expressed that the use of technology was an effective tool during COVID-19 pandemic. By incorporating technology in our educational system, we can prepare teachers and learners to face the situations like COVID-19 pandemic. Technology can assist remote learning options and continue education without any interruption. We can build dynamic system that supports students continued development and learning even in tough situations.

5. Conclusion

Mobile based learning represents a dynamic approach that binds the power of mobile technologies to support learning anytime and anywhere. Mobile-assisted language learning is one of the effective learning approaches that enhance language teaching and learning with the help of portable devices (Cakmak, 2019). This study examined the impact of game-based instruction on learning English Irregular verbs, in which most learners get confused with the use of regular verbs. A significant difference was found between both methods that expand our understanding of mobile game-based instruction as an effective tool for learning English irregular verbs and enhancing L2 lexical acquisition. It suggests that game-based learning can be beneficial for learners who face difficulties with traditional teaching methods as game-based learning is enjoyable and interesting for learners and as well for teachers. Mobile-

assisted language learning has a positive impact on language learners. This research can proceed by changing the variable or student's level.

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