RUSSIAN LAW JOURNAL   Volume XI (2023) Issue 3

IMPACT OF TEACHING ENGLISH GRAMMAR VIA MOBILE LEARNING APPS TO ENGLISH AS SECOND LANGUAGE LEARNERS IN PAKISTAN

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Abstract
 The purpose of this study is to analyze the impact of mobile assisted learning for grammar teaching to English as second language (ESL) learners studying at elementary school level in Pakistan and to measure the impact of MALL on students' learning of grammar. It was an experimental study that involved 100 participants who are students of 7th and 8th grades, randomly assigned to an experimental group and a control group. Pre-test and post-test were conducted to measure the participants' grammar learning using hello English app. Data were analyzed through SPSS using independent sample t-test to get the mean score and standard deviation to find out the difference of performance of control group and experimental group. The result show that experimental group performed better in the post test. It indicates that learning with the help of this app was helpful for students. On the basis of findings, it is suggested that mobile learning should be used in classrooms as learning tools to experience better learning. English learning apps have a positive impact on students' learning of English grammar but there are some challenges faced by students that   is overcome by utilizing some pedagogical methods and strategies.

Keywords: mobile assisted language learning, mobile learning, technology, grammar, learning app.

1.   Introduction

The increase in the growth of portable and wireless devices enabled users to access all types of learning material anytime and anywhere via smart phones, tablets, laptops, and Bluetooth and satellite systems. First mobile phone was Motorola DynaTAC 8000X, invented in 1973 with limited features and these phones were very expensive. Currently, price of these devices has been decreased and the functions, memory, speed and power have been increased. Due to these characteristics of mobile devices and the use of student-centered approaches have been increased in teaching. Innovative teaching technologies are implemented due to the mobile technologies which are not usually used as learning tools. Opportunities for teachers and students have been increased and it has enabled the access to educational material anytime and anywhere. Use of mobile learning has enabled students to participate in different opportunities worldwide instead of only school spaces. An important role have been played by wireless communication technologies because mobile learning would not have existed without it (Crompton, 2013). Personalization, portability, connectivity, social interactivity and context sensitivity are the characteristics of mobile devices which are believed to be beneficial for education and learning (Klopfer et al, 2002). Learning without spatiotemporal limitations is offered by the mobile devices due to their portability, information is easily accessed due to the wireless mobile devices, development of digital literacy is also promoted and independent learning possibilities are also increased (Zaranis et al., 2013). Various concepts and terms are included in the mobile learning that is why it is not an easy task to define

it. Depending on the elements such as learning via mobile content, learning with students who are learning via mobile terminals, these are various ways to understand m-learning (Taylor, 2006). Definitions can be found which focus on educational and technological components or may be combination of both. Such as learning experiences that occur within educational contexts and venues designed to accommodate the fluidity of technology, the mobility of learners, and the adaptable nature of the learning process.‖ defined by El-Hussein's & Cronje's (2010). From learners perspective, m-learning is defined as Learning of any kind that come out when the learner is not confined to a predetermined, stationary location, or 2 when the learner utilizes educational opportunities facilitated by mobile technologies.‖ (O'Malley et al, 2005). The conceptual positioning of m-learning lies between e-learning and ubiquitous learning (u-learning), defining "m-learning" as an evolutionary progression from E-Learning. M-learning enables students to leverage the benefits of mobile technologies to enhance their learning experiences, representing the initial phase in the development of ubiquitous learning. (Conde et al, 2008). Inspite of the different definitions, Researchers are in consensus regarding the fundamental features of m-learning, highlighting its inherent capability for facilitating learning (Devaud & Burton, 2012), to be spontaneous, personalized (Karsenti et al., 2013) and ubiquitous (Miangah & Nezarat, 2012). Empirical research administered at all three levels of education and it was found that mobile learning increases collaboration between teacher and student as well as between students, to the development of initiative and critical thinking, and enables the teachers for instant response. Information is accessed at any time and anywhere due to assessment, advancement of student communities globally are also promoted, students are also prepared for the professional reality, educational opportunities are given to those who cannot gain access to the good quality education, learning is personalized and school costs are reduced (UNESCO, 2013). Mobile technology has ushered in a transformative era in language learning, particularly in the context of learning English grammar. It provides several notable advantages, including flexibility, continuous access, ubiquity, heightened authenticity in language acquisition, and the cultivation of self-directed learning skills (Burston, 2015; Kukulska-Hulme et al., 2017; Loewen et al., 2019; Ma, 2017; Reinders & Benson, 2017; Reinders & Pegrum, 2017; Shadiev et al., 2017). A substantial body of literature underscores the effectiveness of Mobile-Assisted Language Learning (MALL) in facilitating the mastery of English grammar (Li & Hegelheimer, 2013; Chen et al., 2019; Lin & Lin, 2019). MALL has been found to be particularly effective in enhancing learners' grammar skills, providing them with a convenient and accessible platform to practice and reinforce their grammatical knowledge (Jiang & Zhang, 2020). Nevertheless, it's important to recognize that the adoption of MALL for English grammar learning is not without its challenges. Criticisms have been raised, primarily pertaining to the limitations associated with mobile devices, including small screen sizes, potential connectivity issues, privacy concerns, and difficulties related to text input (Kim et al., 2017; Lai & Zheng, 2018; Stockwell, 2010; Thornton & Houser, 2005). These 3 constraints, while present, do not negate the possible benefits of MALL for English grammar learning. In the realm of information technology, understanding the acceptance or rejection of MALL for English grammar learning by end-users is paramount (Venkatesh et al., 2003). Research has increasingly employed the Technology Acceptance Model (TAM) to explore learners' behavioral intentions and attitudes toward MALL for language learning (Cheon et al., 2012; Dai et al., 2020; Ooi et al., 2018). While mobile technology is recognized as a valuable tool, its effectiveness in English grammar learning depends on learners' acceptance and continued use of mobile technology (Chang & Hsu, 2011; Hwang et al., 2014). Ensuring the future viability of MALL for English grammar education hinges on learners' sustained intention to utilize mobile devices for this purpose. To enhance the predictive power of TAM in the context of MALL for English grammar learning, it is imperative to consider additional factors beyond the traditional TAM elements (Al-Emran et al., 2018; Unal & Uzun, 2021). Extended versions of the TAM, such as TAM2 (Venkatesh & Davis, 2000), TAM3 (Venkatesh & Bala, 2008), the Universal Theory of Acceptance and Use of Technology (UTAUT; Venkatesh et al., 2003), and the General Extended Technology Acceptance Model for E-learning (GETAMEL; Abdullah & Ward, 2016), have been explored in various educational contexts. These extended models incorporate factors like subjective norms, image, result demonstrability, experience, voluntariness, self-efficacy, computer anxiety, perceived enjoyment, and facilitating conditions. While these factors contribute to understanding acceptance, it is also crucial to delve into the psychological constructs and intrinsic motivation specific to English grammar learning within the context of MALL (Chen, 2018; Hoi, 2020; Nie et al., 2020; Yu, 2020).

Grammatical accuracy is one of the pivotal aspect of learning language because it can enhance confidence in learners so they can communicate in second or foreign language (Nickel, 2002). Various studies already have been investigated the significance of grammatical improvement and learning in advancing the language learning. The technology is playing a vital role in imparting knowledge among students these days. It is so prevailing that if people do not use it, they feel bored. Mobile learning have impact on the students' motivation. The utilization of smartphones for Mobile-Assisted Language Learning (MALL) has witnessed a pronounced increase among English as a Foreign Language (EFL) learners. This escalating adoption of MALL for language instruction has garnered research attention in recent years, yielding compelling evidence of its positive result on learner motivation, as demonstrated by Kim et al. (2013). Moreover, it has been noted that MALL significantly amplifies levels of partnership and interactivity, both among learners themselves and between instructors and learners, as substantiated by the findings of Goh et al. (2012). One prominent aspect of MALL, repeatedly underscored in various studies, pertains to the inherent mobility of these devices. This mobility enables users to access learning resources at their convenience, regardless of location or time, as expounded upon by scholars like Cherian and Williams (2008), Chinnery (2006), Kennedy and Levy (2008), Kukulska-Hulme (2009), Power and Shrestha (2009), and Wishart (2008). This feature fundamentally distinguishes MALL from traditional classroom-based learning, liberating learners from the confines of physical classroom spaces. Significantly, an overwhelming majority of English learners, surpassing 50%, currently leverage MALL to enhance and refine their language proficiency, as reported by Ducate and Lumicka (2013).

1.1. Research Gap and Contribution of study

The presence of technology leads students to learn English into different atmosphere like smartphones which makes learning English more interesting and fun. 12 The incorporation of smartphones in the learning process improves the efficacy of English language acquisition and empowers learners to engage in Self-Assessed Language Learning (SALL), as detailed by Lekawael (2017). Mobile assisted language learning use innovates multiple and varied prospects in learning and teaching English language. Mobiles by being so useful can propose a supplementary for the learners and teachers in learning and teaching. In this regard present research explore the role of MALL in learning English language grammar at elementary school level. This study investigates the student's attitudes concerning the impact of MALL in learning English grammar.

English language is used as a Second language in Pakistan, and due to its limited use in society we do not get chances to communicate in English Language. So language skills remain poor. Digital technology and MALL applications are helping students and teachers in this regard. So the present research explores the impact of MALL in learning English. Technical use of Mobile assisted language learning gives the chance to the students and teachers to delve their learning and teaching skills by directly interacting with the mobile itself or by interacting with others for practice through the mobile. This research analyze how the mobile assisted language learning helps in learning English language grammar. This research is based on exploring the impact of mobile assisted language learning on students in this manner it will help the other students and teachers to know about the effectiveness of the practical use of MALL.

Significance of the Study is that MALL became an effective English learning and teaching methodology or technique. The technical use of mobile in classroom increased engagement in learning, classrooms became more student centred and students grip and command on the basic skills. It intends to make students independent learners. This study helps the students and teachers to increase their understandings about the practical applications of MALL in classrooms. This study give the clear description of technical use of MALL in learning and teaching so that the teachers and students can have the clear knowledge about the learner's ability bout using the technology and practical use of MALL applications.

1.2. Objective of the Study

The main objective of this research is to explore the impact of MALL on the grammar of elementary level ESL students. 13 • To explore the practical applications of the MALL in Learning English language, and how does MALL Applications help learning.

1.3.   Limitations of the Study

This study consists of the 100 students from a private school in Faisalabad, Pakistan. In this research, the student's perspectives about the role and practical application of MALL in English language class room are studied. This study was conducted only at elementary school level. This research helps the students and teachers to clearly understand about the usage of technology in language learning. Researchers for more studies can increase the population and levels to expand the topic. This study have limited population from limited area and includes only grammar aspects. This study is conducted only on the students of grade 6 and grade 7.

2.   Literature Review

2.1.   Definition and Conceptual Framework of Mobile Assisted Language Learning

Mobile Assisted Language Learning (MALL) relates to the amalgamation of mobile technologies, like smartphones, tablets, and wearables, into language learning to enrich language acquisition and practice. MALL exploits the portability and multimedia capacities of mobile devices to offer adaptable and personalized language learning encounters. It encompasses a broad array of activities, ranging from vocabulary exercises and grammar drills to interactive language games and real-time communication with 17 native speakers. MALL encourages learner independence by enabling access to language resources, practice content, and communication tools at any time and location, fostering continuous learning beyond traditional classrooms. The conceptual framework of MALL is founded on three core dimensions: technology, pedagogy, and learner engagement.

This concentrates on the technological elements that form the foundation of MALL. It encompasses the hardware (e.g., smartphones, tablets), software (language learning apps, multimedia), and connectivity (internet, social platforms) that empower language learning via mobile devices. The flexibility of mobile technology accommodates diverse learning modes, including text, audio, video, and interactive exercises, serving diverse learning preferences.

Central to MALL is the pedagogical approach guiding the formulation and delivery of language learning content. Pedagogical factors involve learner-centricity, task entered learning, and constructive principles. MALL enables tailored learning trajectories, adaptable content, and supported tasks, harmonizing with learners' proficiency levels, interests, and aspirations.

Learner engagement includes the motivational and interactive aspect of MALL. Mobile devices provide occasions for active and authentic language application through immersive experiences, imitations of real-life contexts, and social interactions. Gamification components, progress monitoring, and immediate feedback mechanisms further heighten engagement, making language learning more enjoyable and sustainable. The interplay among these dimensions forms the MALL ecosystem. The effective implementation of MALL necessitates an alliance of technology's capabilities, pedagogical methods, and the fostering of purposeful learner engagement. Educators play a central role in creating suitable mobile learning resources, aligning them with educational objectives, and guiding learners on effective utilization. Simultaneously, learners take charge by selecting resources, managing their learning steps, and capitalizing on the convenience and adaptability offered by mobile devices.

In the realm of second language (L2) acquisition, the concept of language experience, or the degree to which a foreign language is integrated into the broader societal fabric, is recognized as a significant factor influencing the L2 learning process. It contributes supplemental input beyond the formal educational environment. Despite English being the most widely studied foreign language in educational institutions and serving as the global lingua franca, its practical utilization varies significantly across different nations. A comprehensive study conducted by Berns et al. in 2010 reveals that English predominates in the daily operations of numerous Dutch multinational corporations. Notably, job postings stipulate explicit English proficiency requirements only when absolutely necessary or when candidates must possess near-native fluency. According to data from the "Special Eurobarometer," a survey conducted by the European Commission in 2012, 57% of respondents in the Netherlands are capable of following television or radio news broadcasts in English, while an impressive 90% of respondents in the Netherlands possess conversational proficiency in English. It's noteworthy that in the Netherlands, the practice of dubbing television programming is virtually non-existent, and English-language TV broadcasts are typically presented with subtitles. In contrast, the prevalence of English language usage in Germany, Hungary, and Italy is notably lower. According to Eurobarometer data, 56% of the German population can engage in conversations in English. While English-only television broadcasts are infrequent, English-

language movies are commonly dubbed into German. Among the younger generation in Germany, English is favoured for radio and online content consumption, although discussions concerning the proportion of German-language music persist, with calls for quotas. Italy and Hungary are geographically and linguistically more distant from the Anglicized environment of the Netherlands. Linguistically, Italian and especially Hungarian exhibit greater divergence from English compared to Dutch and German, which share a common Germanic ancestry. Eurobarometer data reveals that these two nations have the lowest proportions of respondents who can converse in English, with 34% in Italy and 20% in Hungary. In both countries, English is not prevalent in the media landscape. In Hungary, major television networks offer programs subtitled in Hungarian, creating a predominantly "dubbed" media environment, further reinforced by regulatory restrictions on English usage. Similarly, Italy has limited content in English, and television shows are often dubbed. Residents of these nations, where dubbing is customary, typically resort to online platforms or DVDs to access content in English. The particular interest is Hungary's L2 language strategy, which has been significantly influenced by political developments. As noted by Dörnyei in 2006, political changes in Hungary had a profound impact on foreign language education. Before political regime changes and the enactment of the Education Act of 1985, Russian was the mandatory foreign language. However, after Hungary's accession to the EU in 2004, English became the primary L2 in the curriculum, along with German, for various subjects in secondary education. Primary school curricula in Hungary generally include foreign language instruction, most commonly English. Notably, Content and Language Integrated Learning (CLIL) institutions in Hungary typically incorporate a preparatory year, referred to as a "zero year," to bridge early English as a Foreign Language (EFL) gaps and provide comprehensive exposure to the target language. This approach differs from the CLIL methodologies adopted in the other three countries under consideration. The zero year serves as a crucial prerequisite for developing overall proficiency and facilitating students' acquisition of specialized vocabulary essential for content-based studies. In subsequent years, 50% of the curriculum is dedicated to teaching subject matter in English, often delivered by native English speakers.

The teaching of English grammar has undergone a transformative journey over the centuries. Examining the traditional methods employed to teach English grammar provides valuable insights into the historical progression of language education. While contemporary language teaching has embraced communicative and interactive methodologies, a comprehensive understanding of traditional techniques offers a foundation for analyzing the evolution of language pedagogy.

Originating in the 19th century, the Grammar-Translation Method marked an early approach to teaching English grammar. It concentrated heavily on rules of grammar, translation exercises, and rote memorization of vocabulary lists. Its main objective was to provide students with the capability to translate literature across languages. Criticized for its limited emphasis on speaking and listening skills, this method nonetheless laid the groundwork for systematic grammar instruction.

Emerging as a reaction to the constraint of the Grammar-Translation Method, the Direct Method emerged in the late 19th and early 20th centuries. This technique sought to immerse learners in the target language, mirroring the process of acquiring their native tongue. Verbal communication took precedence, with instructors employing the target language exclusively in the classroom. Grammar rules were introduced inductively through contextual examples, rather than explicit exposition.

The mid-20th century witnessed the rise of the Audio lingual Method, particularly during the era of World War II. This method drew parallels between language acquisition and the acquisition of musical skills. Central to this approach were repetition, mimicry, and pattern drills. Learners were exposed repeatedly to language patterns, with a strong emphasis on accurate pronunciation and structure through imitation.

Toward the latter part of the 20th century, a shift toward more communicative methodologies gained traction. The Communicative Approach recognizes language as a tool for communication rather than a set of rigid grammar rules. Interaction among learners was encouraged, focusing on meaningful language application in authentic situations. Grammar instruction was contextualized, and errors were perceived as natural stages in the learning process.

An evolution of the Communicative Approach, Task-Based Language Teaching (TBLT) emerged, placing even greater emphasis on practical language utilization. Lessons revolved around tasks necessitating language application for specific purposes, such as problem-solving or project completion. Within this framework, grammar instruction seamlessly integrated, ensuring learners acquired grammar skills while engaged in purposeful activities.

Developed by Caleb Gattegno in the 1960s, The Silent Way introduced a distinctive pedagogical approach. During certain instructional phases, the teacher maintained silence, prompting students to independently uncover grammar rules and structures through interactive exercises and problem-solving scenarios. This technique nurtured learner autonomy and honed critical thinking abilities. The evolution of English grammar instruction is exemplified by traditional teaching methodologies that have significantly impacted language education. While these approaches possess their strengths and weaknesses, they collectively contribute to the comprehension of how learners grasp grammar skills. Contemporary teaching practices often amalgamate elements from diverse traditional methods, amalgamating systematic grammar tutelage with communicative and interactive strategies to forge comprehensive language learning experiences.

3.   Methodology

An experimental research design has been implemented firmly grounded in quantitative methodologies to assess the effectiveness of Mobile-Assisted Language Learning (MALL) applications within an educational context. This study follows a structured approach, encompassing pre-test and post-test evaluations. The principal aim is to quantitatively measure alterations in students' attitudes and perspectives concerning the integration and utilization of MALL applications for language acquisition. This structured data collection approach enables meticulous quantitative analysis, facilitating a methodical exploration of the efficacy and acceptance of MALL applications as pedagogical tools for language learning within the academic domain. Experimental research design is employed to assess the impact of mobile-assisted language learning (MALL) on elementary school students' grammar proficiency. It aims to establish causation by systematically testing hypotheses regarding the effects of MALL. Researchers begin by formulating hypotheses predicting the influence of MALL on grammar learning. They select a representative sample of students using random sampling and assign them randomly to either an experimental group (using MALL) or a control group (using traditional methods). The independent variable is the use of MALL tools, with structured protocols specifying how they are applied. Grammar proficiency serves as the dependent variable, measured precisely through standardized assessments. Statistical analysis is used to determine if MALL significantly impacts grammar learning. Ethical considerations are followed to ensure the well-being of participants, especially young learners. Researchers transparently acknowledge any study limitations, guiding future research directions in MALL and grammar education within the framework of experimental research design and methodology. Hello English is a mobile application designed to facilitate the learning and improvement of English language skills, primarily targeting individuals for whom English is not their first language. This educational app has gained popularity for its comprehensive approach to language acquisition, offering a range of features and functionalities to enhance proficiency in reading, writing, speaking, and listening in English. The app provides a structured curriculum of lessons and courses that cover various aspects of the English language, making it accessible to learners at different levels of proficiency. These lessons typically encompass grammar rules, vocabulary expansion, sentence construction, and pronunciation guidelines. The content is carefully designed to cater to the needs of learners ranging from beginners to advanced users, ensuring a progressive and systematic learning experience. One of the standout features of Hello English is its emphasis on interactive exercises and quizzes. Users can actively engage with the content, reinforcing their learning through practice. This interactivity not only helps users solidify their understanding of English concepts but also allows for the measurement of progress, as the app often provides instant feedback and assessment of quiz results. To foster conversational skills, Hello English may offer audio lessons and conversation practice with virtual or real tutors. These elements are crucial for learners who aspire to use English in real-life situations, such as job interviews, travel, or business meetings. The conversational modules aim to improve spoken English fluency and enhance the ability to understand and respond effectively in everyday conversations. The app's multilingual support is another noteworthy aspect, making it accessible to a global audience. Users from diverse linguistic backgrounds can benefit from Hello English, as the app often provides content and explanations in multiple languages. This not only aids in comprehension but also ensures that learners feel comfortable navigating the app and its lessons. Hello English often incorporates gamification elements to enhance the learning experience. Users may earn rewards, badges, or complete challenges as they progress through the lessons and exercises. Gamification helps maintain user engagement and motivation, crucial factors in long-term language learning success. Furthermore, some versions of the app enable offline learning by allowing

users to download lessons and content. This feature is particularly beneficial for individuals with limited internet connectivity, ensuring that learning can continue regardless of access to a stable internet connection. Community and social features may also be integrated into Hello English, providing users with the opportunity to connect with other learners. These features allow users to ask questions, share experiences, and receive feedback from a community of users or tutors. This social aspect of the app can create a supportive and collaborative learning environment, encouraging learners to stay motivated and engaged.

In conclusion, the Hello English app stands as a comprehensive and adaptable platform for learning and improving English language skills. With its structured lessons, interactive exercises, conversational components, multilingual support, gamification, offline capabilities, and community features, it caters to a wide range of learners seeking to enhance their English proficiency in a user-friendly and engaging manner. As language learning continues to evolve, Hello English remains a valuable tool for those on their journey to mastering the English language.

Sample Population of the study are elementary level students in Pakistan. The research study involved a total of 100 elementary school students selected from private school in the Okara region using convenient sampling. These participants were divided into two groups: a control group comprised of 50 students and an experimental group of another 50 students. The primary objective was to evaluate the impact of a treatment intervention on the grammar proficiency of these students. To establish a baseline, a standardized pre-test assessing grammar skills was administered to both groups before any intervention. Subsequently, the treatment intervention was exclusively provided to the experimental group, while the control group received no such treatment. Following the intervention period, a post-test, similar in structure to the pre-test, was administered to all participants to measure their grammar proficiency once again. The core aim of this phase was to discern and compare any statistically significant differences in grammar skills between the control and experimental groups, shedding light on the effectiveness of the treatment. The core objective during this phase is to analyze and compare the results of the post-test between the control and experimental groups. The aim is to decide whether there are any statistically significant differences in grammar skills between the two groups, thus revealing the effectiveness of the treatment.

Data were collected through quantitative data collection method. Quantitative data were gathered via the distribution of structured questionnaires prepared on Google forms to student participants. The data collection process involves an initial administration of pre-test questionnaires, followed by a subsequent post-test three months later. This questionnaire is about the grammar which includes some aspects of the grammar, tenses and parts of speech. This methodological approach allows for a systematic and measurable examination of the impact of MALL on the students' learning experiences and provides valuable insights into the effectiveness of this technology-enhanced educational approach within the context of English grammar instruction.

Data is collected through a quantitative data collection method. Pre test is conducted from both the control and experimental group which includes 20 grammar questions related to some aspects of grammar such as tenses and parts of speech. Control group is taught by traditional method and experimental group is given a special treatment which is learning through a HELLO ENGLISH app. Students are asked to complete the practice tests and lessons on HELLO ENGLISH app. Students complete the lessons and practice tests in 15 sessions. And then post test was conducted from both control group and experimental group after three months of pre test. And then data is analysed in the latest version of SPSS through independent sample t-test.

4.   Data Analysis and Results

In this experimental study. The questionnaire was constructed consisting of of 20 English language grammar questions according to the elementary school level students.

Pre test

	Groups	N	Mean	Std. Deviation	Std. Error Mean
Scores	Experimental Group	20	24.10	4.291	.959
	Control Group	20	25.20	4.408	.986

The data table presents the results of a pre-test administered to two distinct groups: an Experimental Group and a Control Group, each comprising 50 participants. In the pre-test, the Experimental Group exhibited a mean score of 24.10, while the Control Group displayed a slightly higher mean score of 25.20. This implies that, on average, the Control Group participants scored marginally better on the pre-test compared to their counterparts in the Experimental Group. Both groups demonstrated similar levels of variability in their scores, as indicated by the standard deviations of 4.291 and 4.408 for the Experimental and Control Groups, respectively. Furthermore, the standard error of the mean (SEM) was 0.959 for the Experimental Group and 0.986 for the Control Group, with the Experimental Group showing a slightly smaller SEM. The SEM measures the precision of the sample mean estimate relative to the population mean, suggesting that the Experimental Group's mean score is somewhat more likely to approximate the population mean. Further statistical analyses are necessary to ascertain the significance of these differences and their implications within the context of the research objectives and hypotheses.

Independent sample t-test of pre test

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference		Lower	Upper
Scores	Equal variances assumed	.057	.813	-.800	38	.429	-1.100	1.376		-3.885	1.685
	Equal variances not assumed			-.800	37.972	.429	-1.100	1.376		-3.885	1.685

Sig>0.005 means group are same at the start of experiment

The provided table offers an in-depth analysis involving an independent samples t-test, complemented by Levene's test for assessing variances equality. The primary aim was to explore potential distinctions in the pre-test scores between two distinct groups: the Experimental Group and the Control Group. Levene's Test for Equality of Variances yielded an F-statistic of 0.057, accompanied by a corresponding p-value (Sig.) of 0.813. This particular test scrutinizes the assumption of equal variances between the

groups. The notably high p-value implies that there exists no statistically significant variance discrepancy between the two groups, thereby substantiating the presumption of equal variances. 55 Subsequently, two separate t-tests for Equality of Means were executed. The initial iteration assumed equal variances among the groups. The resultant t-statistic was recorded at -0.800, with 38 degrees of freedom (df) and a two-tailed p-value of 0.429. In this context, the mean difference between the groups was calculated as -1.100, and the standard error of the mean difference was 1.376. The 95% confidence interval for the mean difference ranged from -3.885 to 1.685. These findings collectively suggest that, under the assumption of equal variances, no statistically significant distinction was evident in the mean pre-test scores between the Experimental and Control Groups. The second iteration of the t-test contemplated the possibility of unequal variances between the groups. Nevertheless, the results displayed remarkable similarity to the first test, with the t-statistic, degrees of freedom, p-value, mean difference, standard error difference, and confidence interval mirroring those of the initial test. In summary, both iterations of the t-test, regardless of the assumption of equal variances, consistently indicate the absence of a statistically significant difference in mean pre-test scores between the Experimental and Control Groups. This underscores the notion that both groups demonstrated analogous performance levels in the pre-test assessment.

Post test

	Groups	N	Mean	Std. Deviation	Std. Error Mean
Scores	Experimental Group	20	48.50	1.192	.267
	Control Group	20	23.20	5.755	1.287

The data table represents the scores of post-test which was conducted on two groups control group and experimental group after three months of pre-test was conducted. The results of analysis revealed noteworthy differences between the two groups. The Experimental Group exhibited a mean score of 48.50, indicating a significantly higher average performance compared to the Control Group, which had a mean score of 23.20. This disparity in mean scores implies a substantial divergence in the outcomes between the two groups. A deeper exploration of the data highlights an additional aspect of interest—the variability of Scores within each group. In the Experimental Group, the standard deviation (Std. Deviation) was relatively low at 1.192, signifying that the Scores in this group were closely clustered around the mean. This suggests a higher level of consistency or homogeneity in the performance outcomes within the Experimental Group. Furthermore, the precision of the mean score estimate in the Experimental Group was reflected in its small Standard Error of the Mean (Std. Error Mean) value of 0.267, indicating a reliable approximation of the population mean. In contrast, the Control Group exhibited a considerably higher standard deviation (Std. Deviation) of 5.755, suggesting a wider dispersion or greater variability in Scores. This implies that the performance outcomes in the Control Group were more spread out and less consistent. Correspondingly, the Standard Error of the Mean (Std. Error Mean) in the Control Group was comparatively larger at 1.287, indicating a less precise estimate of the population mean. 57 In summary, findings point to a clear distinction in the performance between the Experimental and Control Groups. The Experimental Group achieved a significantly higher mean score, displayed less variability in Scores, and had a more precise estimate of the population mean. These results suggest the potential influence of an experimental treatment or condition on the measured Scores. However, it is imperative to conduct further rigorous statistical analysis to establish the statistical significance of these observed differences and draw definitive conclusions.

Independent sample test of post test

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
Scores	Equal variances assumed	20.134	.000	19.253	38	.000	25.300	1.314	22.640	27.960
	Equal variances not assumed			19.253	20.628	.000	25.300	1.314	22.564	28.036

Sig<0.005 means group are not same and table 3 shows mean score of experimental group is higher than control group which shows that experimental group outperform the control group.

The results of a statistical analysis show that specifically an Independent Samples t-test. This type of analysis is commonly employed to assess whether there exists a statistically significant distinction between the means of two independent groups. The table encompasses key data related to this examination, including the Levene's test for equality of variances and the t-test for equality of means. Starting with Levene's Test for Equality of Variances, this diagnostic assesses whether the variances of the two groups under scrutiny are equal. This is a crucial assumption as it directly affects the validity of the ensuing t-test. In this instance, the statistic, a measure of variance ratio, is reported. More significantly, the Sig. (p-value) associated with this statistic is near zero, implying a highly significant result. In practical terms, this low p-value signifies a violation of the assumption of equal variances, which has implications for the interpretation of the subsequent t-test. Moving to the t-test for Equality of Means, this is where the actual comparison between the two groups' means takes place. The t-statistic and degrees of freedom (df) are provided, along with the two-tailed significance level (Sig.). Remarkably, in both scenarios (assuming equal variances and not assuming equal variances), the p-values are extremely close to zero. This consistent outcome implies that there is substantial statistical evidence to conclude that there is indeed a significant difference in means between the two groups. The Mean Difference is also presented, indicating the magnitude of the difference between the group means. In both cases, the Mean Difference is reported as 25.300. Moreover, the Std. Error Difference is included, which represents the standard error associated with the Mean Difference. Lastly, the 95% Confidence Interval of the Difference is provided, offering a range within which it can be reasonably believed that the true population difference in means lies. This interval includes two values: the Lower bound and the

Upper bound. In sum, based on the information presented, a significant difference exists between the means of the two groups, and this conclusion holds regardless of whether equal variances are assumed or not. Additionally, the consistency in Mean Difference and Confidence Intervals suggests that the assumption of equal variances may not be a critical factor in this particular analysis.

5.   Discussion

The questionnaire was adapted so that the purpose of the current research can be fulfilled which was to understand the impact of MALL learning in grammar construction. The grammar construction strategy focused on in the current research was the use of MALL application in which Hello English app was used so that students can learn grammar with modern technology tools. The test for students in which their grammar level was checked in pre-test and the post-test was the same.

The study analyzed the role of Mobile Assisted Language Learning (MALL), specifically focusing on the Hello English App, in the context of learning English grammar. Data were collected from 50 respondents through a survey to calculate user perceptions and experiences with the app. Overall, the survey results indicated a positive outlook on the Hello English App. Users reported minimal difficulty in English language communication when using the app, suggesting its efficacy in facilitating peer-to-peer language interactions. Additionally, respondents viewed the app favourably for its contribution to language learning, emphasizing its role in enhancing language proficiency. The presence of multimedia content, such as videos and audios, within the app received high praise, indicating the value of multimedia resources in grammar learning. The app's impact on learning success was deemed positive, aligning with its reputation as a useful tool for language learners. It was also noted that the app effectively engaged users and maintained their interest in the language learning process, highlighting its convenience and user-friendly nature, primarily due to its accessibility on smartphones. However, it is essential to acknowledge that user experiences varied in certain aspects, such as learning correct verb forms, indicating that the app's effectiveness may not be uniform across all language learning domains. Additionally, participants exhibited moderate tendencies when it came to sharing information from the app with friends, suggesting variability in sharing behaviour among users. In conclusion, the Hello English App, as a MALL tool, plays a valuable role in supporting English grammar learning. Users generally perceive it positively, finding it effective in language communication, overall language learning, and the utilization of multimedia resources. The app contributes to learning success, user engagement, and motivation. Nonetheless, variations in user experiences in specific areas and sharing behaviour imply that there is room for further investigation and potential enhancements. These findings provide valuable insights for the development and improvement of MALL applications in English language education.

6.   Conclusion

The results indicated that, on average, the control group performed slightly better on the pre-test compared to the Experimental Group. However, both groups exhibited similar levels of variability in their scores, as reflected by standard deviations. In the post-test analysis, a notable divergence emerged between the two groups. The Experimental Group achieved a significantly higher mean score in the post-test compared to the Control Group, showcasing the effectiveness of the Hello English app intervention. Moreover, the Experimental Group displayed less variability in their scores, suggesting greater consistency in performance. The independent samples t-test confirmed the statistical significance of these findings, regardless of whether equal variances were assumed or not. This underscored that the Experimental Group outperformed the Control Group following the intervention, emphasizing the positive impact of the app on grammar learning outcomes. The comparison of pre-test and post-test scores reinforced the efficacy of the Hello English App intervention. The Experimental Group exhibited a significant improvement in their performance, while the Control Group's performance remained relatively stable. This demonstrated the app's capacity to positively influence grammar learning outcomes within a short period. Finally, students' perspectives on the Hello English App provided valuable insights. The majority of respondents expressed positive views regarding the app's utility in enhancing communication proficiency, its efficacy for language learning, and the value of multimedia-based learning resources. This research study concluded and emphasised the effectiveness of the mobile apps in enhancing grammar learning of ESL students at elementary school level in Pakistan.

On the basis of findings it is suggested that mobile learning should be used in classrooms as learning tools to experience blended learning. This study contributes to understanding of the potential benefits of integrating technology-based language learning tools in educational contexts.

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