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Using Whatsapp as MALL Tool to Enhance ESL Learners' Performance in Pakistan

Muhammad Mooneeb Ali, Department of English, Government College of Science,Wahdat Road, Lahore/Department of Applied Linguistics, Government College University, Faisalabad, Pakistan
TayyabbaYasmin, Lecturer, University of Education, Lahore, Pakistan
Dr. Khalid Ahmed, Assistant Professor, University of Central Punjab, Lahore, Pakistan

ABSTRACT- This exploration has studied the educational impact of WhatsApp as an important tool of Mobile Assisted Language Learning (MALL)in ESL learners' academic performance at grade 8 in Pakistan. For the current investigation ESL learners from Lahore were the population of the studywhereas the sample size was of 100. All these learners were selected through random sampling method. At the initial stage the learners were given a pre-test and after that they were divided into two groups i.e. controlled and experimental group students. The teaching time was of 1 month and after a month a post test was conducted similarly structured like the pretest. The overall results gathered from the data reflect that the performance of the experimental group learners was much better than the controlled group. It was found out that WhatsAppas a MALL tool has ben significantly beneficial for the learners.

Keywords: Mobile-assisted Language learning, WhatsApp, ESL learners, Grade 8, Pakistan.

I. INTRODUCTION

Mobile Assisted language learning (MALL) has been a new research area for researchers and teachers. Presently there is a variety of mobile applications that can be used by people. In Educational context the learners can have various apps like MP3s, videos, PDFs, WhatsApp, Facebook, Twitter, YouTube, and web-based language learning sitesViber and Whatsapp etc. These latest innovations have changed the canvas of communication and learning globally.

The presence of technology in language classrooms is irrefutable. Specifically, in English language classrooms, the use of technology is a regular feature among nations. The emergence of English as a lingua franca has forced the integration of technology in a classroom to provide a global learning experience to the students. The efficacy of technology in a language environment is the trend of modern language classrooms (Saranya, 2020). It is said that the modern world is a world of visual literacy where computers, televisions, mobile phones, games, social networking websites, chat rooms, emails and instant messages are a common feature for communication and entertainment among the learners. But the aim of technology is to go further in learning i.e. learning with the help of technology (Lock & Kingsley, 2007). Learning with the help of technology not only fosters the process of creativity but also empowers the learners to be autonomous and to produce individual efforts by using the channels of technology. Like the use of multimedia creates the construction of knowledge (Reeves, 1998). All the devices of technology can help learners to infuse innovation and modernity in their learning process (Mohanty, 2011). There are various technological tools used in academic situations. One important aspect of technology inside the classroom is mobile-assisted learning which becomes possible by the use of mobile technology. Mobile technology is a new type of technology that emerged in the late 20th century. After the emergence of mobile technology became a part of the lives of individuals. Mobile technology refers to mobile devices that are affordable, easy to handle and is liked by the masses. Mobile technology includes mobile phones and other communicative devices like laptops etc. (Mayisela, 2013).

Previously ESL learning was only restricted inside the classroom In the past, foreign language learning was limited to classroom and textbooks but today information and communication technology has provided language learners with many applications and programs for developing their language through computers, internet, mobile Smartphone

1.1 Mobile Assisted Language Learning

MALL has been defined as the use of "mobile technologies in language learning, especially in situations where device portability offers specific advantages" (Kukulska-Hulme, 2013, p. 3701). It is the usage of mobile devices in the process of teaching and learning a language. This trend has opened up a new style of learning which is indifferent to already practiced methods. It is an approach that elaborates the use of mobile devices for language learning purposes. MALL explains how mobile phones and devices can be helpful in language learning (Valamarthi, 2011). Beatty (2003) says that the use of mobile devices for language learning purposes is called MALL. Miangah and Nezarat (2012) say that MALL is the utilization of mobile phones in the language learning process. In contrast to classroom learning, in MALL there is no need for the learners to sit in a classroom all the time to get learning materials. In fact, MALL can be considered an ideal solution to language learning barriers in terms of time and place. Kukulska-Hulme and Shield (2008) say that any learning which is through portable type of devices is called MALL. Both teachers and students can find out ways to use MALL to assist them by eradicating old methods of learning and teaching as MALL also assists in removing the complexities of language learning processes (Alexander, 2004).

MALL includes

- Mobile phones, PDAs,
- pads,
- pods as well as handheld/portable devices for making,
- voice calls,
- short messaging,
- video chats,
- Audio MP3, MP4,
- web surfing and Mpeg and
- electronic dictionaries etc.

MALL has been the top trend for researchers and language learners since 2000. A lot of research has been done in the western countries on different aspects of MALL (Burston, 2013). It is an area that is getting mature with the passage of time and now multiple dimensions related to MALL are being explored by the language researchers. There are works being done on the role of MALL and MALL tools i.e. mobile phones in and outside the classroom, the authenticity of mobile devices, its pros and cons, etc. The distinguishing feature of MALL is that it offers a variety of learning methods to multiple difficult concepts of learning. The latest software, mobile applications and purposefully designed apps play a vital role in uplifting the performance of the learners. Islam, Islam and Mazumder (2010) stated that mobile applications are easy, user-friendly, inexpensive, downloadable and easily processed. Mobile applications are connected to the internet or are downloaded for the purpose of running on mobile phones and devices. This mobile app can be an email account or a gaming app or an educational app. Mobile applications are actually software types of programs that are tailor-made for mobile phones. They make mobile phones into a hub of entertainment, education and infotainment. Some applications are built-in whereas some are downloaded from the internet or any other app-store (Holla&katti, 2012).

MALL offers a lot of applications that can help learners, teachers and administrators. These applications and websites provide students with opportunities for self-learning and can be used in and outside the classroom for practicing a foreign language and developing proficiency in it. Savignon (1997) stated that communicative competence, in a foreign/ second language, can be establishedbygenuinecommunicationsviaexpressive and contextualized language. However, period given by the classroom is insufficient for performingpracticing and mastering the language skills, and classrooms are more formal and institutionalized; hence they are unable to provide contextual learning situations and interactions, thus cannot provide real contextualized language use

and interactions. So, there is a strong need to investigate alternative methods under MALL that can support informal learning situations and can help learners' interactions and communication outside the classroomsAhmed and Pawar (2018).

1.2 Rationale of the study

The pondering point in the education system is the use of technology and gadgets that can serve as testing tools to elevate learning. Specifically, in Pakistan, there is a scarcity of utilizing technology for educational purposes. The latest technology tools and their application in the local classroom is still a dream. Multimedia and OHPs' are the only technological invasion inside the classroom. So, Pakistan is lacking behind in the use of the latest technology tools that has created a revolution in learning; particularly English language learning globally.

In Pakistan, English language is a compulsion till graduation yet the majority of the learners face difficulties because of their mother tongue background, learning methods, learning techniques, conventional methods of teaching that focused upon rote learning. The traditional methods like grammar-translation are losing their impact upon learners and resultantly the learners are reluctant to learn English language even in compulsory subjects (Jahanzaib&Zeeshan, 2017).

On the other hand, the use of mobile phones is getting higher and higher in Pakistan. Over 92% of youth are mobile phone users (Farooq, Ali, Mahmood, Farzand, Masood&Mujahid, 2019). Mobile mania has also provided a space where mobile phones can be used for learning purposes like MALL. The current problems of Pakistan learners in English language learning call on for the use of latest technological tools, ways and techniques to revolutionize and transform traditional learning methods. There is a huge space to invade MALL to initially see what impact it creates on the learners. MALL has already been the latest sensation in the educational domain globally. MALL has strongly influenced the education system and various successful researches have proved its vitality and utility. MALL has created multiple new learning paths along with innovative methods and trendy learning domains. The inclusion of MALL can create wonders in Pakistani classrooms and after filtration, researches and corrections it can prove to be a vital tool in Pakistani English language classrooms

1.3 Research Questions

1) What is the impact of Whatsapp as MALL tool on learners while their learning process
2) Is there any significant difference in the performance of controlled and experimental group learners?

II. LITERATURE REVIEW

The era of global autonomy and the rise of a multiethnic and multicultural society are paving way for second language learning as it provides individuals with a chance to study a foreign language as their second language and it provides insight awareness into cultures of other nations and develops awareness amongst individuals. This view is also supported by Curtain and Dahlberg (2004) explained that presently the need for a second language is gaining popularity because of hybrid cultures and the social needs of people. There are several studies that indicated that second language learners have several benefits like a better attitude towards learning as they are creative and more culturally aware (Bamford& Mizokawa, 1991; Baker 2006). They also have flexibility as part of their cognition and they are divergent and creative thinkers, they can communicate better across national and cultural boundaries (Liddicoat, 2002a). It also increases the individual career development prospects as they reflect better comprehensive skills. The past researchers also stated that it develops creativity and divergence in thinking (Fernandez, 2008).

2.1 Mobile phones as MALL tool

A Mobile phone is a gadget, wireless in nature which was initially invented with the basic purpose of communication, messaging and interaction. Gradually the inclusion of camera and the internet too became the regular features of mobile phones (Korucu&Alkan, 2011; Quinn, 2011). Mobile phones are handheld and are carried by the user all the time; even without purpose unintentionally. This feature is called mobility. This mobility feature makes mobile phones a typical device for learning (Caudill,2007; Crow, Santos, LeBaron, McFadden, & Osborne, 2010; Benson &Voller, 2014; Quinn, 2011;Traxler, 2007). Contrastively the present computers and laptops and even the tablet PCs are dubious to be used as a mobile device for learning as they, unlike the mobile phone are difficult to carry with convenience. As the low cost, powerful network, rowing phone capacity and variation in models, ownership and appreciation of mobile phones provide them a clear edge over other MALL tools (Iqbal&Qureshi, 2012; Hayati, Jalilifar, Mashhadi, 2013; Quinn, 2011). Amongst youngsters and adults Mobile phone is quite popular and its admiration is increasing day by day. Particularly amongst students of college especially in developed countries, the need for mobile phones is growing for learning purposes (Traxler, 2007; Li, &Hegelheimer, 2013; Xia, Wang & HE, 2013;Summey, 2013; Xu, &Peng, 2017).

The trend of Mobile phones as a MALL tool has gained a lot of appreciation in other continents but now it is making its influence in Asia as well. Hayati, Jalilifar and Mashhadi (2013) stated that mobile phones are most preferred to be used for MALL. This is because the technology of mobile phones is ubiquitous, affordable, easier in usage for learners and teachers and affordable also. Specht, Ternier and Greller (2011) observed that much discussion, stress and concentration in MALL especially in the higher education context is upon using mobile phones. Miangah and Nezarat (2012) investigated that out of all mobile devices mobile phones are the most powerful and influential devices for communication and learning purposes. Cuing and Wang (2008) found out that the use of Bluetooth as well as Wi-Fi in mobile phones permits sharing of material on different platforms like Google drive, Google, email forums, social networking forums, etc. which can allow timely and correct feedback from the instructors. Zhang, Song and Burston (2011) said that mobile phones are based upon technology that has the skill and talent to enrich the learners' level of efficiency, especially where there is a scarcity of self-learning.

2.2 MALL and Pakistan

Already computerized assisted language learning (CALL) has been implemented in some of the institutions and there are some researches on CALL in Pakistan as well Like Nadeem, Mohsin and Hussain (2012) conducted a study through CALL to improve the pronunciations of the teachers. Similarly, Irshad and Ghani (2015) performed a case study to find out the advantages of CALL for ESL learners in the Pakistani context. Further Bhatti (2013) conducted a research to improve the reading ability of the students at the secondary level in Karachi through CALL with fruitful outcomes.

However, as mobile phones are becoming a phenomenon and an affordable machine for every individual in society it is a great idea to involve mobile phones for learning purposes. In Pakistan, the acceptance and popularity of mobile phones for different purposes is increasing rapidly. Here the utilization of mobile phones apart from communicative purpose is mainly for watching movies, using social media websites, checking emails, group chats, etc. There is no practical concept, proper training and implication of MALL for learners, teachers and institutions. So, here in the Pakistani context, the use of mobile phones for language learning is in its very initial stage and we hardly find any research on it. A recent study conducted by Ali, Gulzar and Anwar (2018) explored the influence of MALL on the grammatical learning of EFL learners. Having Grade 5 participants as a population the results were investigated through an experimental study. The outcomes reflected that those learners who studied through MALL improved immensely as compared to conventional learners.

2.3Past researches towards Whatsapp usage

Whatsapp earlier was only utilized for communication and information, later it added on for entertainment and family or friends connections (Gasaymeh, 2017). Further, Mistar and Embi (2016) viewed that the major motivation of this app is uninterrupted and anytime anywhere communication. Etim, Udosen and Ema (2016) have also asserted that social grouping and collaborative learning are the hallmarks of Whatsapp.

Nitza and Roman (2016) explored in their study that learners are inclined to use WhatsApp for their academic communication. Likewise, a study by Amanullah and Ali (2014) also presented that Whatsapp has been the most preferred medium for collaborative learning. In an ESL context a study by Fattah (2015) ascertained that Whatsapp is effective in elevating learners in their performances, particularly in ESL learning situations. Likewise,Allagui (2014) also performed a study and found out that Whatsapp improved the learning and comprehension of the learners in English language learning classes. Baishya and Maheshwari (2020) investigated that learners found group meetings and discussion constructive on Whatsapp amongst teachers and themselves and it solved their learning issues. Moreover, Güler (2016) presented the vitality of Whatsapp for particular assessment of learners. All these researches showed the worth of WhatsApp in academic affairs

III. RESEARCH METHODOLOGY

A design of the research is an important aspect in any type of research as it gives dimensions to pick up suitable methods and tools for providing answers to the questions of the research (Strydom, 2017). Parahoo (1997) also supported this argument by stating that a design of research is a strategy that designates when, where and how the data is to be gathered and used for analysis. In other words the binding of research questions, data and results is called research design (Yin, 2002). The design of any research can be positivist and interpretivist or can be a mixture of both for taking the objective and subjective viewpoint of the particular subject under observation. Both are equally important as they efficiently entertain different research designs (Corbetta, 2003; Marcon&Gopal, 2005; Kroeze, 2012).

3.1 Population of Data Collection

The population for data collection comes from Lahore. This population was considered keeping in view the purpose of the design of research which was to carry out an experimental study using MALL on ESL learners. Precisely the population was all the public sector Schools learners who were studying in public sector institutes in Lahore. These learners were studying English as their compulsory subject.

3.2 Location of Data Collection

The data were gathered with an aim to perform an experimental study to find out the efficacy of MALL on learners. The location for this was Lahore which is the provincial capital of Punjab, Pakistan. In Lahore, the location of the study was the public sector schools which were selected randomly. From these Public sector schools, 100 learners were taken to form two groups i.e. controlled and experimental group.

3.3 Tool for Data Collection

The objective of the research is to find out the impact of MALL. For the said reason, an experiment was conceptualized. For this experimentation, it was important to collect the prior and after experiment results of the learners in order to check if there was any significant difference in their performance. The instrument for the second phase of data collection were

- ❖ Pre test
- ❖ Post test

The pre-test is important as it is a tool utilized for assessment for determining already existing subject knowledge of the learners (Berry, 2008). Usually, they are conducted at the initial stage of any course (Angelo & Cross, 2012). Similarly, in this study on these 120 learners, a pre-test was conducted which comprised of 20 MCQ questions (See Appendix 3) according to the format and pattern of the syllabus of intermediate English part 1.

IV. RESULTS

This development in vocabulary and writing supports (Jafari and Chalak, 2016) study of the effectiveness of WhatsApp in developing students‟ vocabulary and Fattah (2015) study in terms of WhatsApp's role in developing writing skills.

4.1Pretest Results of Independent Sample T test (Controlled and Experimental Group)

Table-4.1.1

Group Statistics

Pretest	N	Mean	Std. Deviation	Std. Error Mean
Experimental Group (x2)	60	9.85	1.287	.166
Control Group (x1)	60	9.18	1.282	.166

In the above Table-3.1.1, there are two sample groups considered in the study; control group (x1) and experimental group (x2) each with sample size of n =60. Pretest results reveal that sample mean value m1 = 9.18 of the control group is however slightly less than the sample mean value m2 = 9.85 of experimental group. The extent of sample data spread out of both groups about the respective sample means is measured by standard deviation (SD), let represented by s1 = 1.282 for control group is also however slightly less than of SD of experimental group s2 = 1.287. The estimated standard errors show the dispersion of sample means (m1, m2) about their respective population means let (μ1, μ2); which both groups have approximately equal estimated standard errors of sample means, let represented se1= se2 = 0.166.

Table-4.1.2

Independent Samples Test

Independent Samples Test		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	P-value (Sig.)	T	Df
Pretest	Equal variances assumed	.494	.484	2.843	118

Equal variances not assumed			2.843	117.999

In the table 3.1.2the F-test statistic value (F= 0.494) with p-value = 0.484 > (α = 0.05 as level of significance) reveals that Ho is accepted and concluded that two respective populations have equal SD or variances (σ1 = σ2) or the two population groups are homogeneous. Under this homogeneity condition, difference between sample means (m2 – m1 = 0.667 approx. in Table-4.5.1.3) is examined by t-test statistic. The value of t-test statistic (t= 2.843 with df = 118, in Table-02) with p-value (in Table- 4.5.1.3) = 0.005 < (α = 0.05) indicates that the two sample groups represent two significantly different populations, and hence shows that experimental group performance is better than the control group on the average. The estimated standard error of the difference between the two sample means (m2 – m1) is represented by se1= 0.234 (in Table-03); and 95% Confidence Interval Limits (CIL) describe that the population mean difference (μ2 - μ1) is estimated to lie between the interval [0.202, 1.131].

However, under non-homogeneity condition (unequal population SD, σ1 ≠ σ2), the difference between sample means (m2 – m1 = 0.667 approx. in Table- 4.5.1.3) is examined by the t-test statistic. The value of t-test statistic (t= 2.843 with df = 117.999, in Table-4.5.1.2) with p-value (in Table-4.5.1.3) = 0.005 < (α = 0.05) also reveals the similar conclusion that the two sample groups represent two significantly different populations as Post Control and Post experimental groups, and hence shows that experimental group performance is better than the control group. The estimated standard error of the difference between the two sample means (m2 – m1) is represented by se2= 0.234 (in Table-4.5.1.3); and 95% CIL describe that the population mean difference (μ2 - μ1) is estimated to lie between the interval [0.202, 1.131], similar to above one under homogeneity condition.

Table-4.1.3

Independent Samples Test

Independent Samples Test		t-test for Equality of Means				
		P-value Sig. (2-tailed)	Mean Difference (m2 – m1)	Std. Error Difference	95% CIL of the Difference Lower	Upper
Pretest	Equal variances assumed	.005	.667	.234	.202	1.131
	Equal variances not assumed	.005	.667	.234	.202	1.131

4.2. Post Test Results of Independent Sample Test (controlled and experimental group)

Table- 4.2.1

Group Statistics

Posttest	N	Mean	Std. Deviation	Std. Error Mean
Experimental Group (x2)	60	16.83	.977	.126
control Group (x1)	60	11.82	1.066	.138

In the above Table-3.2.1, the Post test results reveal that mean value m1 = 11.82 of the control gro=up is less than the mean value m2 = 16.83 of experimental group. The SD, s1 = 1.066 for control group, shows higher dispersion than of SD of experimental group s2 = 0.977; and hence the estimated standard error for control group is se1 = 0.138 also more variability than se2 = 0.126 for experimental group.

Table-4.2.2

Independent Samples Test

Independent Samples Test		Levene's Test for Equality of Variances		t-test for Equality of Means	
		Test statistic F	p-value Sig.	T	Df
Posttest	Equal variances assumed	.051	.822	26.879	118
	Equal variances not assumed			26.879	117.126

In the above Table-3.2.2, the F-test statistic value (F= 0.051) with p-value = 0.822 > (α = 0.05 as level of significance) reveals that Ho is accepted and concluded that two respective populations have equal SD or variances (σ1 = σ2) or the two population groups are homogeneous. And under this homogeneity condition, the difference between sample means (m2 – m1 = 5.017 approx. in Table-4.5.2.3) is examined by the t-test statistic. The value of t-test statistic (t= 26.879 with df = 118, in Table- 4.5.2.2) with p-value (in Table-4.5.2.3) = 0.000 < (α = 0.05) indicates that Ho is rejected and concluded that the two sample groups represent two significantly different populations and hence shows that experimental group performance is significantly much better than the control group on the average. The estimated standard error of the difference between the two sample means (m2 – m1) is represented by se1= 0.187 (in Table-4.5.2.3); and 95% CIL describes that the population mean difference (μ2 - μ1) is estimated to lie between the interval [4.647, 5.386], favoring that experimental group shows better performance on the average.

Table-4.2.3

Independent Samples Test

Independent Samples Test		t-test for Equality of Means				
		P-value Sig. (2-tailed)	Mean Difference (m2 – m1)	Std. Error Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Pretest	Equal variances assumed	.000	5.017	.187	4.647	5.386
	Equal variances not assumed	.000	5.017	.187	4.647	5.386

However, under non-homogeneity condition (unequal population SD, $\sigma 1 \neq \sigma 2$), the difference between sample means (m2 – m1 = 5.017 approx. in Table-4.5.2.3) is examined by the t-test statistic. The value of t-test statistic (t= 26.879 with df = 117.126, in Table-4.5.2.2) with p-value (in Table-4.5.2.3) = 0.000 < (α = 0.05) indicates that Ho is rejected and concluded that the two sample groups represent two significantly different populations and hence shows that experimental group performance is significantly much better than the control group on the average. The estimated standard error of the difference between the two sample means (m2 – m1) is represented by se1= 0.187 (in Table-4.5.2.3); and 95% CIL describes that the population mean difference ($\mu 2 - \mu 1$) is estimated to lie between the interval [4.647, 5.386], favoring that experimental group shows better performance on the average, similar to above one under homogeneity condition.

4.3. Pretest and Post test Result of Paired Sample T test including the Reliability Statistics of Cronbach alpha (Controlled Group Results)

Table-4.3.1
Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	9.22	60	1.290	.167
	Post test	11.85	60	1.039	.134

In the above Table-3.3.1, there is one sample group considered in the study; one condition before experimentation i.e. pretest group (x1) and after experimentation i.e. post-test group (x2) each with sample size of n =60. Pretest results reveal that sample mean value m1 = 9.22 is less than the sample mean value m2 = 11.85 of Post-test group. The dispersion of sample data of both groups about the respective sample means is measured by standard deviation (SD), let represented by s1 = 1.290 for Pretest group is however greater than of SD of Post-test group s2 = 1.039. The estimated standard errors (se) show the dispersion of sample means (m1, m2) about their respective population means let ($\mu 1$, $\mu 2$). Result shows that se1= 0.167 for Pretest group also greater than se2 = 0.134 for Post-test group.

Table-4.3.2
Paired Samples Correlations

Paired Samples Correlations		N	Correlation	p-value (Sig.)
Pair 1	Pretest & Posttest	60	.796	.000

In the above Table-3.3.2, the sample correlation between Pretest & Posttest groups is r = 0.796 with p-value = 0.000* < (α = 0.05 as level of significance) reveals that Ho: $\rho = 0$ is rejected and concluded that two population Pretest group (x1) & Posttest group (x2) are positively significantly correlated.

Table-4.3.3
Paired Samples Test

Paired Samples Test	Paired Differences (d)					T	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% CIL of the Difference				
				Lower	Upper			
Pretest - Posttest	-2.633	.780	.101	-2.835	-2.432	-26.137	59	.000

In Table- 3.3.3, the mean difference between paired sample (md = m1 – m2 = -2.633 approx.) is examined by t-test statistic. The value of t-test statistic (t= -26.136 with df = 59) with p-value = 0.000* < (α = 0.05) indicates that the two sample groups represent two significantly different populations, and hence shows that post-test group performance is significantly much higher than the pretest group on the average. The

estimated standard deviation (SD) shown by sd = 0.780 describes the dispersion among the sample paired differences (d), whereas the estimated standard error (se) shown by se(d) = 0.101 describes the dispersion among the sample mean differences (md) about population paired mean difference (μd). And 95% Confidence Interval Limits (CIL) describe that the population mean difference (μd) is estimated to lie between the interval [-2.835, -2.432].

Table-4.3.4
Case Processing Summary

		N	%
Cases	Valid	60	100.0
	Excluded [a]	0	.0
	Total	60	100.0

a. List wise deletion based on all variables in the procedure.
Table-3.3.4 shows case processing summary of valid paired data of sample (N=120) included as 100% in the analysis, nothing excluding.

Table-4.3.5
Reliability Statistics

Cronbach's Alpha Based on Actual Items	Cronbach's Alpha Based on Standardized Items	N of Items
α = 0.820	α = 0.828	2

In the above Table-3.3.5, a reliability analysis was carried out on the perceived task values scale comprising 2 item groups. For this Cronbach alpha (α) is used as test statistic to measure how well the reliability or internal consistency is between the item groups. In the given sample, the estimated statistics of Cronbach alpha based upon the actual items (α = 0.820) and the StandardizedCronbach alpha (α = 0.828) fall between the interval [0.8, .90] and hence shows better reliability &internal consistency between the two groups, Pretest (x1) & Posttest (x2). Most items appeared to be worthy of retention, resulting in a decrease in the alpha if deleted.

4.4 Pretest and Post test Result of Paired Sample T test including the Reliability

Statistics of Cronbach alpha (Experimental Group Results)

Table-*4.4.1*
Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 PreTest (x1)	9.85	60	1.287	.166
PostTest (x2)	16.83	60	.977	.126

In the above Table-*3.4.1*, another sample group is taken in the study; one condition before experimentation i.e. pretest group (x1) and after experimentation i.e. post-test group (x2) each with sample size of n =60. Pretest results reveal that sample mean value m1 = 9.85 is less than the sample mean value m2 = 16.83 of Post-test group. The dispersion of sample data of both groups is measured by standard deviation (SD), let represented by s1 = 1.287 for Pretest group is however greater than of SD of Post-test group s2 = 0.977. The estimated standard errors (se) show the dispersion of sample means (m1, m2) about their respective population means let (μ1, μ2). Result shows that se1= 0.166 for Pretest group also greater than se2 = 0.126 for Post-test group.

Table-*4.4.2*
Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 PreTest (x1) &PostTest (x2)	60	.721	.000

In the above Table-3.4.2, the sample correlation between Pretest & Posttest groups is r = 0.721 with p-value = 0.000* < (α = 0.05 as level of significance) reveals that Ho: ρ = 0 is rejected and concluded that two population Pretest group (x1) & Posttest group (x2) are positively significantly correlated.

Table-*4.4.3*
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 PreTest – PostTest = (x1 - x2)	-6.983	.892	.115	-7.214	-6.753	-60.617	59	.000

In Table-3.4.3 above, the mean difference between paired sample (md = m1 – m2 = -6.983 approx.) is examined by t-test statistic. The value of t-test statistic (t= -60.617 with df = 59) with p-value = 0.000* < (α = 0.05) indicates that the two sample groups represent two significantly different populations, and hence shows that post-test group performance is significantly much higher than the pretest group on the average. The estimated standard deviation (SD) shown by sd = 0.892 describes the dispersion among the sample paired differences (d), whereas the estimated standard error (se) shown by se(d) = 0.115 describes the dispersion among the sample mean differences (md) about population paired mean difference (μd). And 95% Confidence Interval Limits (CIL) describe that the population mean difference (μd) is estimated to lie between the interval [-7.214, -6.753].

Table-*4.4.4*
Case Processing Summary

		N	%
Cases	Valid	60	100
	Excluded [a]	0	0
	Total	60	100.0

a. List wise deletion based on all variables in the procedure.
Table-3.4.4 shows case processing summary of valid paired data of sample (N=60) included as 100% in the analysis.

Table-*4.4.5*
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.820	.828	2

In the above Table-3.4.5, a reliability analysis was carried out on the perceived task values scale comprising 2 item groups. For this Cronbach alpha (α) is used as test statistic to measure how well the reliability or internal consistency is between the item groups. In the given sample, the estimated both statistics of

Cronbach alpha (α = 0.820) and the StandardizedCronbach alpha (α = 0.828) fall between the interval [0.8, .90] and hence shows better reliability &internal consistency between the two groups, Pretest (x1) & Posttest (x2). Most items appeared to be worthy of retention, resulting in a decrease in the alpha if deleted.

V. FINDINGS

The research investigates the impact of MALL on learners' performance in the Pakistani ESL context. The findings of this experimental process on both the controlled and experimental groups reveal some important facts.

Further, there are two tests applied on the collected data. Independent sample t-test and paired sample t-test. Both Independent sample and paired sample tests are applied on pre-test and post-test scenarios. The independent sample t-test actually compares two means of two different groups. It also validates that both of the samples are collected independently. The objective of applying both the test is to investigate the impact of MALL by finding out the significant difference (if any) in the performance of both the controlled and experimental group in pre and post-test results. It can be seen in above tables that the experimental group performed slightly better than the controlled group. The statistic value presented in the tables above clearly validates that both sample groups belong to different population. Viewing the values in pre-test above it can be seen that both experimental and controlled groups performed almost equally. The difference of mean between both the groups in their pre is not significantly great.

VI. DISCUSSION

The results of this study reflect that there is a vivid difference in the performance of the students of experimental group as compared to controlled group students. Though, the performance of the learners is higher in the post test results of both the groups but significant difference can be viewed while comparing the post-test values of both groups. The outcomes of the study are similar to the investigation conducted by (Thornton and Houser, 2005; Sole and Neijmann, 2010; Baleghzadeh and Oladrostam, 2010) who were of the view that mobile phones actually develop a constructive relationship with the learning of language. Whatsapp provided laxity and comfort to Pakistani learners and it enhanced their ESL learning. Using Whatsapp for learning was a new trend that made them interested in learning situations.This view is similar to the study performed by Bensalem (2018) who explored that apps like Whatsapp improves academic conversation and thus enhance learning of learners. It was also found out that vocabulary learning can be considerably improved by using Whatsapp.This study is identical with the study with Ta'amneh (2017) who explored the efficacy of Whatsapp amongst EFL learners. They found out that Whatsapp significantly uplifted the performance of experimental group learners as compared to controlled group

Zhao (2005) also pointed out that MALL makes the perfect ambiance for language learning purposes. The outcomes reflect that controlled group learners though do have a difference in the performance of pre and post-test yet the difference is not significant. That may be that ESL learning in a traditional classroom environment becomes uninteresting for the learners and the overall process of learning becomes monotonous. Wang (2010) supported this view that some English language lessons are unable to make an impact on the learners and resultantly demoralize the learners thus making them uninterested in the learning process. The results collected from this study also explained the fact that MALL which has been a common practice in teaching and learning in western classrooms and educational institutions is equally liked and appreciated by the Pakistani learners and teachers. The clear difference in the performance of the experimental group as compared to the controlled one is a proof that MALL does impact learners and their performance.

VII. Conclusion

This section of the experimental study was aimed to explore the impact of MALL on ESL learners' performance in Pakistan. Focusing upon the objectives and research questions the efficacy of MALL has been explored. For the said purpose a quantitative method was used to draw the outcomes. It has been stated after viewing all the results and discussion above that a positive effect has been provided by MALL in the Pakistani educational context and MALL did impact positively on ESL learners in Pakistan. MALL transformed the learners of the experimental group and given them energy boosted their learning desires and lower down their level of anxiety. MALL and also helped them to overcome linguistic inhibition during their communication with their teacher and peers on various instances. It also promoted newer methods of collaboration, ubiquity, mutual understanding, construction of knowledge and learners' autonomy. According to the results presented above the idea of utilizing MALL in the local context has been proved fruitful and the learners' who utilized MALL performed much better as compared to the learners who taught conventionally. The current investigation therefore has some strong implications for ESL learners, teachers, administrations and curriculum planners. Using MALL the ESL learners can increase their learning, build their conceptual understanding and utilize modern learning methods. Utilizing MALL can increase the efficacy and efficiency of the teachers also as it can provide them with various innovative, trendy, inspiring and captivating teaching methodologies that can attract learners. For the administrators of the colleges, the use of mobile phones and MALL inside the institution must be promoted and they must realize that to catch up with modern challenges new methods like MALL are mandatory to be introduced and exploited. Curriculum designers can involve more technological concepts into the curriculum to make learners able to meet modern challenges.

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