

The Role of ICT in Motivating Learners in ESL Classroom at University Level in Lahore

Maria Riaz*
Irfana Omar**
Muhammad Amin***

Abstract

ICT integration in language classrooms is the subject of research for many decades. The purpose of this descriptive study was to investigate the effect(s) of using ICT tools (in ESL classroom at undergraduate level in Lahore) on motivation and learning. In this study, teachers (from government and private sector) were interviewed to evaluate their stance, perception and behaviors towards ICT usage in ESL classrooms; and what, according to them, are the impacts of ICT on students' motivation. Course outlines used in Punjab University and University of Central Punjab were reviewed. A survey was also conducted from students to quantify students' behavior and attitudes towards ICT tools and its impact on their motivation. Gardner's AMTB was adopted in the questionnaire and the data was analyzed through SPSS. This study shows that ICT tools have motivational impacts on students' attention and learning. Results obtained reveal correlation between students' and teachers' opinion and attitude towards ICT.

Keywords: ICT, ESL, Motivation, Students' attention, Learning.

Introduction

Motivation plays a vital role in academic as well as life-long learning (Sanacore, 2008) and educationists have been researching and working hard to find solutions to motivate their students in order to maximize their learning (Linnenbrink & Pintrich, 2003; Granito & Chernobilsky, 2012).

Second and foreign language learning achievement may greatly influenced by motivation (Gardner & Lambert, 1959). English, undoubtedly, has become more enjoyable and practical after the language teachers started using computer and technology for their day to day lectures. Hence, it indicates the strong role of computer

*University of Central Punjab, Lahore

**Faculty of Information & Technology, University of Central Punjab, Lahore

***Multan Campus, University of Education, Lahore

used in class may results the improvement in learners' attitude and motivation for learning English as a second language. According to many researchers, exploring the patterns of the ways learners behave while learning a language; the vigor, the direction, the very motive of students' behavior are basically the ways to identify and study motivation (Deci & Ryan, 1985; Prinzessinnadia, 2013).

Literature Review

ICT has become a beneficial and an inevitable pedagogical tool in education (Brown, 1980; Lenhart, Madden, & Hitlin, 2005; Randall, 2006; Irshad, 2008; Irshad & Ghani, 2011). ICT is the abbreviation for Information Communication and Technology. This abbreviation is currently being used for all technologies which are adopted to communicate and work with information in terms of hardware and software (Lee-bihni, 2012).

Prensky (2004) stated that a world without computers and digital media is meaningless for the students and their approach towards the world of information and communication technology is different from their forefathers who are viewed as 'digital immigrants'. Integration of ICT in education has started in 1970 with the introduction of computer and technology in classrooms and teachers have started taking great interest in it (Cunningham, 2000; Lee, 2000).

Many researchers have realized that the integration of technology has very constructive impacts on motivating students. According to Genç and Aydın (2010), the role of technology in language classrooms is under investigation for students' personality, ways of learning and motivation; in short evaluating the effectiveness of CALL is the main aim. Learning students' behaviors was the main key for Lumley (1991) as he noted that students' were observed to be bored in traditional classrooms when too easy tasks were assigned whereas; when given too difficult tasks, it made them upset and annoyed. So, the main key is to use technology in accordance with students' needs and strengths. It helps them thrive. Technology can be used in diverse ways to make language learning more appealing and involving and learners are always intrigued to participate and learn when shown different Audio and visual learning treats. As per Soo (1999), the role of a teacher becomes really crucial in this regard as if the pedagogy and style of a teacher do not match with students' learning style; it would result in loss of motivation on the part of students as this would cause boredom and incomprehension for learners (Nunan & Carter, 2002; ICT in English Language Teaching and Learning, 2013).

The feature of speakers and smart technology in computers is exceedingly motivating and when computer reads the text loudly, students feel more motivated and

their listening skills improve (Jakobsdottir & Hooper, 1995). An improvement in learning and grades is observed by the teachers due to improvement in attention and hence motivation due to integration of multimedia in the classrooms (Prinzessinnadia, 2013). Teachers also believe that use of multimedia results in improved attention, inquisitiveness and interest (Boster, Meyer, Roberto, & Inge, 2002).

As Roger (1996), Lai (2006), and Nobar and Ahangari (2012) stated that concurrence of computer and traditional second language learning constitute students' independent and autonomous learning, and teachers obtain ample time for those areas of language teaching which, otherwise, can't be taught through computers. The accessibility of computer and multimedia has increased, due to such pedagogical advantages, in both schools and domestic level. People, all over the world, started realizing its practical results in teaching and learning and hence making it an imperative part of ESL.

Mayer (2005) believed that being presented with words as well as pictures has enabled learners to create a verbal along with picturesque mental image so that students can have better connection with image and learning (Nobar & Ahangari, 2012). Learners can more successfully internalize information via ICT in classrooms and can access multiple resources in order to understand and learn.

The multitude of authentic resources can be accessed through one simple click. Both educators and students can use these resources in diverse and significant ways to improve cognition in ESL class. This access has enabled teachers to develop pedagogically more creative recourses for their class (Leloup & Ponterio 2003 as cited in Nobar & Ahangari, 2012). Even giving feedback to the students is and can be done through computers.

Internet is proved more promising in providing helpful material as compared to tape recorders and videocassettes (Szendeffy, 2005). ICT is a treat for the people who want to improve their listening skills with countless audio and visual resources. Researchers state that having examined the available sources on developing learners' listening skills in ESL classrooms, no wonder the internet has achieved popularity (Kavaliauskienė, 2008; Nobar & Ahnagari, 2012). Computer(s) can adapt the nature of learning by pushing the responsibility and control more in the hands of the learner; , means making it more learner-centered than teacher centered (Bruce, 1993; Jonnasen, 1999; Smith, 2004).

Conceptual Framework

While more and more emphasis is given to the integration of CALL or ICT in Pakistan, there is a need to identify how promising this idea sounds and how promising it actually is. The study explores that to which extent ICT is helpful in language learning in ESL context. As Gardner suggested that the success of ICT can only be ensured if students adopt positive attitudes towards ICT because only then it seems to become a motivating tool for second language learning.

This study is set in the context where enriching the institutes with latest and high profile technological tools is considered a must for the development and learning of the students both in schools and universities. With the increase in demand, the current study investigates that how the output of the ICT tools as motivated learning is occurring in English as a second language learning classrooms, at university level, from the perspective of both teachers and the students.

Statement of the problem & Research Questions

The major aim of this study was to investigate the role of information and communication technologies (ICT) and its impacts on students' motivation. Though there are many studies available which already proved that ICT have many motivational impacts on students' learning both inside and outside classroom; the motive of this study was to investigate such phenomenon where the use of technology is highly emphasized, and to measure the motivational learning. The focus of the study is at undergraduate level. So, keeping in view the aim and focus of the study, following research questions are advanced:

- What is the perception of the teachers about the motivational effect of using ICT in the classroom on students' learning?
- What is the students' level of satisfaction with using technological tools?
- What factors motivate students while learning through ICT tools in an ESL classroom?
- What are the impacts of those motivational factors on students' language learning?

Method

Sampling

Data was collected, through convenience sampling method from 192 students studying English in University of Central Punjab (UCP) and 120 students studying English in Institute of Administrative Sciences, University of the Punjab (PU). A survey was conducted for the undergraduate students who were selected through convenience

sampling in order to understand and have an idea about the integration of ICT for motivation from the students' perspective. According to Karlinger, survey method is considered best to get individual and social specifics, viewpoints, motivations, approach and apprehensions (1986). The scope of a survey based investigation can vary due to large scale investigation or small one by single researcher (Nunan, 1997) as its foundation is, most of the time, based on the snapshot of circumstances, occurrences and attitudes at a particular instant (Gorard, 2003), and also questionnaires are an easy and practical mean of gathering data (O'Maley & Chamot, 1990; Netemeyer, Bearden, & Sharma, 2003).

The researchers chose convenience data sampling technique in order to maintain the validity of the data gathered in a short period of time and also easy access to the respondents. Researchers made sure that this sample is taught through some of the information and communication tools and has familiarity with these tools.

Interviews were conducted through face to face method and teachers were asked to give short and long responses and also to give suggestions. The data were treated through SPSS 21 and a battery of advanced statistical technique was used to analyze data.

Instrumentation and Data Analysis

A quantitative research framework was adopted to analyze the role of ICT as a motivational tool for learning in the classroom at undergraduate level in Lahore. Quantitative research aims to quantify the relationship between two variables. In case of this study, it was to quantify the impact of using ICT tools on motivational learning in the classroom. The current study is descriptive in nature. In a descriptive study, "no attempt is made to change behavior or conditions--you measure things as they are" (Hopkins, 2000). A survey is conducted on 312 students in which 136 are males and 176 are females. Interview conducted on 25 Teachers. M.A/M.Phil teachers included for interview. 1 to 6 years' experience counted for interview. For data collection two universities Govt. and private included.

The self-constructed adaptation of questionnaire was done from Gardner's (1985) 'Attitude Motivation Test Battery' (AMTB). Major reason for selecting this test was that it was adapted in huge number of quantitative studies (Gardner & Lambert, 1972; Masgoret & Gardner, 1994; Kristmanson, 2000; Williams, Burden, & Lanvers, 2002; Pineda, 2011; Altasan, 2016; Özel, 2017), which consequently established its validity and reliability for more than two decades. Since present research dealt with Motivation for learning through ICT, so different questions were adapted and modified keeping in

mind Passay and Rogers model for motivation (2004) and for its relevance to research cornerstone.

A five-point likert scale (strongly agree, agree, neutral, disagree and strongly disagree) questionnaire was developed of total 30 questions as to determine the students' level of satisfaction with each statement or question asked.

To evaluate the validity of the questionnaire, researcher conducted a pilot testing of the tool developed. A class of BBA Fall, 2015 was asked to give their feedback and suggestions to how this tool could be improved. Students suggested using simple vocabulary to make it easier to understand. After redrafting the questionnaire, researcher asked three educational experts, who are related with ESL teaching or expert in quantitative studies, to evaluate each statement as valid and authentic. They gave their consent to the validity of the questions asked. So, necessary changes were made and a survey comprising of 30 questions was drafted. Before conducting the survey, the last step was to further check the validity, reliability and internal consistency of the questions through Cronbach alpha.

Table 1

Scale Statistics

Mean	Variance	Std. Deviation	No. of Items
70.92	158.231	12.579	33

Table 2

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
.857	.869	33

As it is clear in Table-3B, the Cronbach's alpha result of the questionnaire is 0.87 which is more than 0.6 and is nearest to coefficient 1, so the questions in the survey had enough reliability and internal consistency to test students' motivation.

Results

Descriptive: Interviews from Teachers

Teachers, who were interviewed were all M.Phil and have had an experience of more than 5 years, except for one teacher who was a Master of English, but had an experience of almost two decades.

When asked about training, few teachers have got training of ICT tools integration in the classrooms. Institutes and organizations are only interested in equipping their classes with ICT tools but teachers are not trained to use those tools.

Teachers showed great interest in teaching through ICT tools and believed that it is very important to incorporate these tools for students' learning and motivation. All teachers were 100% agreed that ICT tools motivate their students (Fig-2). The use of clips and movies make simple lecture interesting for the students and that motivates them as well.

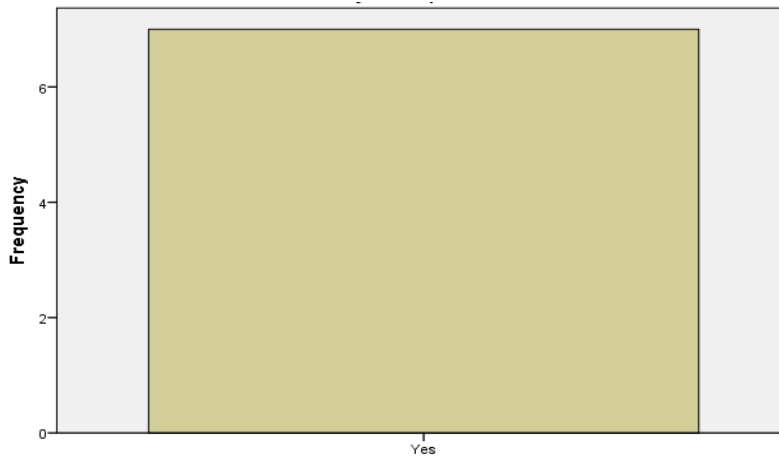


Figure 1. *Does using multimedia and other communication tools motivate your students? Pl share your experience*

When asked about that whether using ICT has a positive effect on all four basic skills of second language learning (Listening, Reading, Speaking & Writing) or not, all were agreed that it definitely does. According to them, mostly speaking skills develop or improve, whereas listening and writing also advance.

Table 3

ICT improves for basic skills

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	25	100.0	100.0	100.0

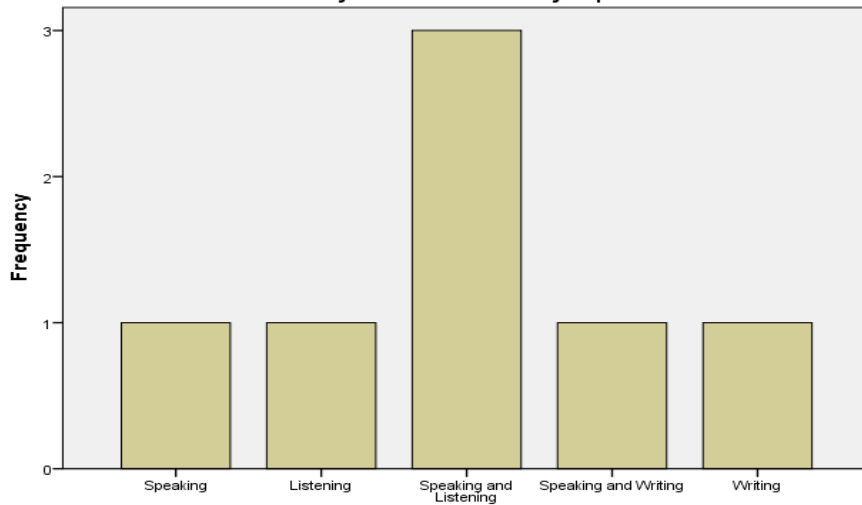


Figure 2. *Which skill do you believe is mostly improved?*

Seventy out of 25 teachers said that ideally a class should be based on 70% or more teaching and learning through ICT tools. Unexpectedly, 2 teachers of a local private university believed that there is no need as such to incorporate ICT tools in classrooms, yet they were of the view that ICT definitely motivates their students. Most of the teachers believed that teaching through multimedia and other ICT tools adds a lot to their confidence and a PPT file or video clip saves a lot of time and effort.

Teachers believed that rather than depending on one, either ICT or traditional method, a blend of both may work better to meet the needs of postmodern learners.

Teachers shared multiple issues and problems that they face in the classrooms when integrating ICT tools; the majority faced technical problems and the internet based issues.

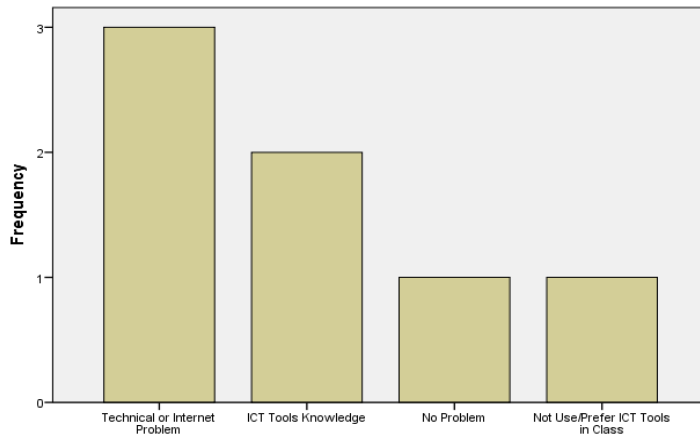


Figure 3. Any problems dissatisfaction that you feel related to ICT integration in your classroom

During interviews, interestingly, teachers apparently realized the importance of ICT inclusion, but few were of the view that it is not compulsory and their simple traditional class lecture also works the same way as lecture through ICT tools. Most of the teachers agreed that a proper training and understanding of the CALL or ICT tools is a must.

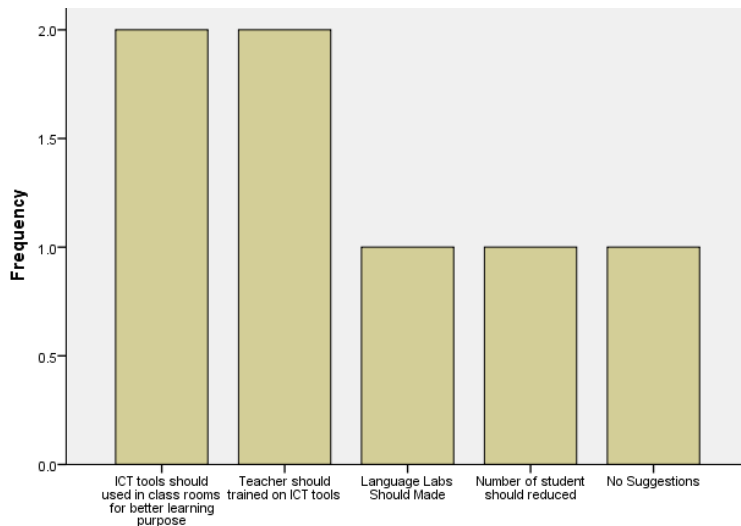


Figure 4. Any suggestions

Students' Survey

As the second part of this research, a survey was conducted in UCP and IAS, PU to record students' opinion and perception of ICT in language classrooms. Students showed great interest (as predicted by teachers) in the incorporation of ICT tools in their language classrooms. 71.8 % of the students' sample population believed that computer and technology is very important for learning language. Though the students love the use of technology in their ESL class, they feel that it is not a compulsion.

Interest and Understanding (I&U)

ICT, according to many people, develops an interest in learning and teaching. When students were asked to give their view on the statement, more than 75% of the students agreed with this statement and find ICT more comprehensible method of learning as compared to traditional learning in an ESL classroom. Students considered PPT based lectures more comprehensible and interesting (Figure below) and took it as indication of the fact that teachers are well prepared.

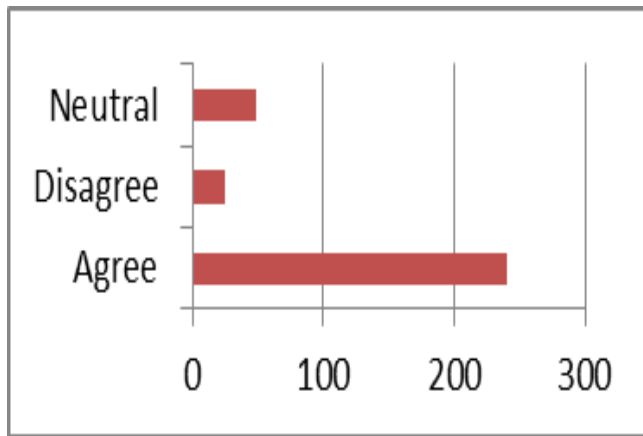


Figure 5. *ICT tools make lecture interesting and comprehensible*

Autonomy (Au)

When students are taught from a variety of tools and methods, it adds to their confidence and autonomy. Students, from both private and government university, were agreed with that use of ICT gave them sense of freedom and motivation.

Grammar (Gr)

Students showed mixed responses regarding learning grammar through technology and communication tools. 135 students agreed to the statement that old grammar books are better than learning grammar online, 96 recorded their

disagreement, whereas 80 students showed neutral stance to the statement. Still, students like online grammar exercises as they immediately get the results. This immediate feedback is important for the students.

Result Oriented Approach (ROA)

As indicated in Passay's Model for Measuring Motivation (2004), results and future outcomes play an important role in motivating learners. Researchers, in a questionnaire, added 2 questions related to result oriented approach. Students, both male and female, confirmed that they expect to show improvement, in terms of both results and learning.

Personal Satisfaction (PS)

The researchers added 3 questions in order to evaluate students' personal satisfaction and admiration towards ICT tools. Mostly, students consider that ICT tools are making classroom learning more interesting and enjoyable.

On the whole, students really like and appreciate the integration of technology in their classes. Their approach towards its incorporation in an ESL classroom was also affirmative.

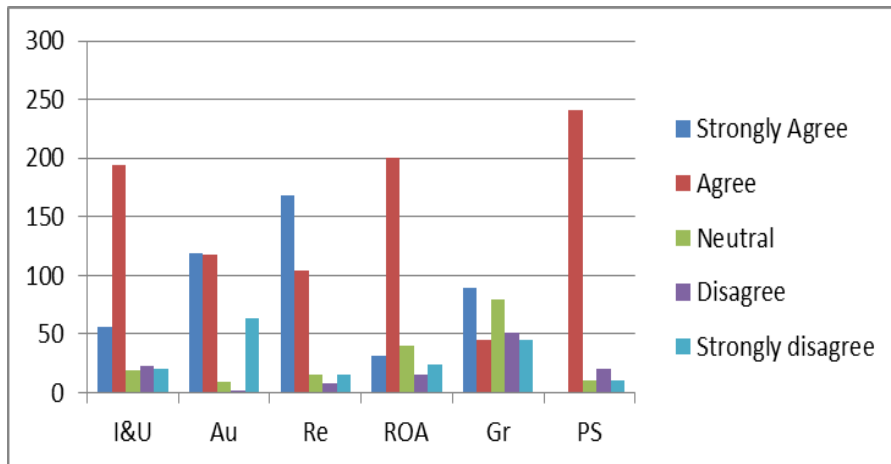


Figure 6

Students' Comments

When asked about the difference in students' behavior when taught through ICT and when through traditional lecturing, many students shared their experience that students are more attentive when taught through ICT tools. Most of the students stated

that learning activities through ICT are more engaging as compared to traditional teaching because the music, light and colors attract their attention.

Students were not very enthusiastic when asked about 100 percent ICT based classrooms. Female students mostly, were against this idea. One of the students wrote that she would not like this idea because, in such labs, teacher role will be minimized. Moreover, male students were also little hesitant as they liked the idea of language lab, but mostly wrote that they want a class based on blended learning.

Correlation Analysis

Through correlation relationship is measured between teachers and students point of view for ICT. Teachers feel more satisfied and confident when they teach through multimedia and other communication tools likewise students feel that technology tools add more confidence while giving a presentation. As p value is 0.02 which is smaller than $\alpha=0.05(p<\alpha)$ so we can say that there is a positive relationship between students and teachers satisfaction and confidence for technology tools as correlation value is 0.132. Teachers and students thought that technology tools are important in language classrooms. It is an important part of classrooms during lectures. As p value is 0.019 which is smaller than alpha value=0.05. So we can say that there is a positive relationship between teachers and students point of view about the importance of ICT as correlation value is 0.076. Technology tools also affect student's grades in a positive way. Teachers also agree that students got higher grades due to technology tools. As p value is 0.041 which is smaller than $\alpha=0.05$. So, we can say that teachers and students agree with that grades improved due to technology tools as correlation value is 0.070. Teachers' interview showed that students took more interest through technology tools used in classrooms. ICT tools to motivate the students to do more. As p value is 0.039 which is smaller than the alpha value so we can say that students and teachers have a significant relationship about students' understanding and motivation as correlation value is 0.010. Teachers feel that technology tools affect teaching-learning process positively and students found learning language more comfortable and interesting. As p value is 0.049 which is smaller than alpha so we can say that ICT method is a far better method because students feel enjoyment in classrooms as correlation value is 0.146. There is no relationship between the students' point of view that power point method is boring and teachers view is that technology tools are motivator for students. As p value is 0.072 which is greater than alpha so we can say that there is negative correlation as correlation value is -0.336. Students love to use technology tools in classrooms and teachers feels satisfactory during lectures using technology tools. As p value is 0.01 which is smaller than 0.05 so we can say that as

student loves to learn in ICT classrooms and then teacher more satisfied during lecture as perfect correlation value is 1.

Factor Analysis

Table 4

Descriptive statistics

	Mean	Standard Deviation	N
Satisfaction and confidence	5.08	0.79	337
Importance of ICT	6.08	1.00	337
Skills improvement	5.75	1.29	337
Grades	5.25	0.86	337

Using factor analysis, different items included in the questionnaire can be measured that how teacher and student views about ICT can affect each other. There are five factors and in each factor there are more than 2 items. The amount of total explaining variance in each variable is 67.133%.The value of KMO statistic is 0.717 showing sampling adequacy appropriate for the data. Bartlett's test which measures the null hypothesis that the variables are significantly correlated or correlation matrix is an identity matrix. For the current data the Bartlett's test of Suphericity yielded a Chi-Square statistic 8676.12. The null hypothesis was rejected at 0.01% level of significance with $p=0.000$. Thus we can proceed to the factor analysis. As Cronbach's Alpha is greater than 0.05 in all factors, so we can say that the data shows the reliability and internal consistency of a set of scale or test items.

Conclusion

Technology is a modern need and reality. Day by day, people are becoming more and more reliant on technological and communication tools. A little kid now learns poems, counting and many different things from either YouTube or Baby TV. So, from a little toddler to a grown up old man, everyone now finds these ICT tools as an inevitable reality. The purpose of this research was to investigate the impact of ICT tools on students' motivation towards learning English as a second language.

According to the results gained in current study, a better motivated learning can be achieved if following factors are considered (Figure below)

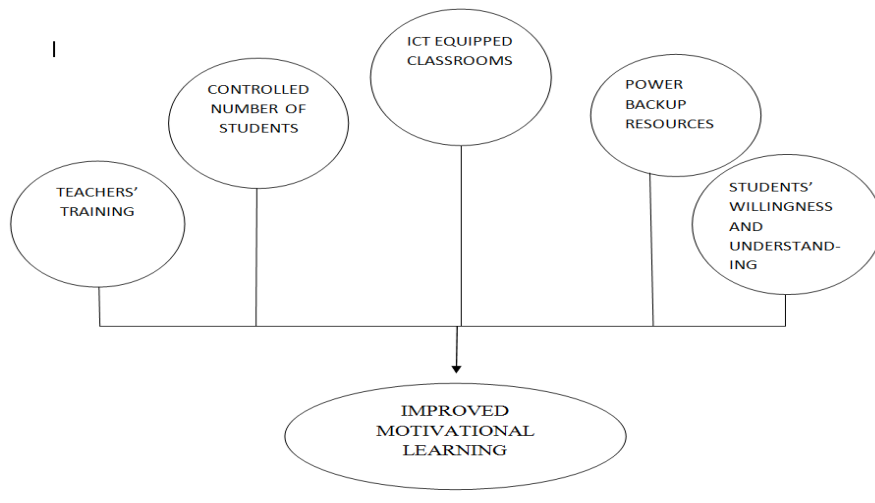


Figure 7

ICT in an ESL classroom motivates learners in a very positive manner. In Lahore, being the capital city of Punjab, the overall condition is better than other small cities of Punjab. Even here in Lahore, a long effort is required to carry out the successful application of CALL. Government of Pakistan must understand the dire need of increasing the overall budget for education. Since Ministry of Education and HEC are realizing the importance of ICT equipped classroom, a practical step is a necessity. Smart budgeting is the only solution where one can utilize local resources with integration of expensive online tools and websites. A proper training for the teachers and a positive encouragement to the students will do wonders.

Implications

Looking at all the results and previous studies, there is no doubt left to the fact that ICT integration in the ESL classrooms is a need and a requirement. All over the world, different universities and institutes are using ICT based courses for better learning and to ensure secure and successful implementation of these tools. As predicted by many researchers (Jonassen, 1999) long time ago that in the future all traditional methods of teaching will become obsolete or will be reduced and if provided with rightful tools and opportunities, students will show satisfaction and improvement towards English Language Learning. CALL does not depend on which software is used rather depends on how the software is put to use by teachers and students (Warshauer, M., 1996). In addition lack of awareness, motivation and training on part of teachers results in under use of the provided resources.

Provision of fully equipped computer lab for language learning is costly and this is possible in private institutes because students can pay for the expenditures as one of the recent project of Beaconhouse; Concordia College, where to have a Tablet or an I-pad is a must for all the students. But, this is very difficult in the government sector where our government is not ready to spend money. Government shall allocate more budget to enhance quality of education .

A positive encouragement should be provided to the students to use technology and making them feel that they are more independent, have more control over their own learning and have high expectations. This autonomy will add more responsibility in learners. Passey(2004) also suggested encouraging students to become responsible autonomous learners to ensure success.

References

- Atkinson, E. S. (2000). An investigation into the relationship between teacher motivation and pupil motivation. *Educational Psychology*, 20(1), 45-57.
- Bax, S. (2003). CALL- past present and future. *System* 31, 13-28.
- Chen, C. (2006). Computer Assisted Language Learning and Teaching. Retrieved from <http://www2.nkfust.edu.tw/~emchen/CALL/unit1.htm>.
- Cunningham, K. (2000). Integrating CALL into writing Curriculum. *The Internet TESL Journal* 6, Article. Retrieved June 27, 2015 from <http://iteslj.org/Articles/Cunningham-CALLWriting/>.
- Davies, G., Walker, R., Rendall, H., & Hewer, S. (2012). Introduction to Computer Assisted Language Learning (CALL). Module 1.4 in Davies G. (ed.) *Information and Communications Technology for Language Teachers (ICT4LT)*, Slough, Thaes Valley University.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behaviour*. New York: Plenum Publications.
- Dörnyei, Z. (2010). Researching Motivation: From Integrativeness to the Ideal L2 Self. In S. Hutson & D. Oakey (Eds.) *Introducing Applied Linguistics: Concepts and Skills* (pp. 74-83). London: Routledge Publications.
- Dörnyei, Z. (1994). Motivation and motivating in the language foreign language classroom. *The Modern Language Journal*, 78(3), 273-284.
- Gardner, R. C. (1960). Motivational variables in second-language acquisition (Unpublished PhD Dissertation). McGill University.

- Gardner, R. C. (1985). *The Attitude Motivation Test Battery: Technical Report 1*. University of Western Ontario: London.
- Gardner, R., & Lambert, W. (1972). *Attitudes and motivation in secondary language learning*. Rowley, M. A: Newbury House.
- Gorard, S. (2003). *Sampling: the basis of all research – Quantitative Methods in social sciences*. New York: Continuum Publications.
- Granito, M., & Chernobilsky, E. (2012). The Effect of Technology on a Student's Motivation and Knowledge Retention. *NERA Conference Proceedings 2012*, Paper 17 https://opencommons.uconn.edu/cgi/viewcontent.cgi?article=1016&context=nera_2012.
- Hashwani, M. S. (2008). Students' attitudes, motivation and anxiety towards English language learning. *Journal of Research and Reflections in Education*, 2(2), Available at: http://ecommons.aku.edu/pakistan_ied_pdck/7
- Jadoon, M. K. (2015). Interview from Dr. Tariq Rehman: *English will stay as the language of power*. The News International. Retrieved from <http://tns.thenews.com.pk/>.
- Jonnasen, D. (1999). *Designing Constructivist Learning Environments*. Pennsylvania State University.
- Kaka, S. (2008). The Role of ICT in Education Sector. Retrieved from <https://verykaka.wordpress.com/2008/07/25/the-role-of-ict-in-education-sector/>.
- Mansoor, S. (2004). *The Medium of Instruction Dilemma: Implications for Language Planning in Education*, in Mansoor, Miraj, & Tahir (Eds.), *Language Policy, Planning and Practice: A South Asian Perspective*. Karachi: The Aga Khan University and Oxford University Press.
- Mansoor, S. (2005). *Language Planning in Higher Education: A Case Study of Pakistan*. Karachi: Oxford University Press.
- Nobar, A., & Ahangari, S. (2012). The Impact of Computer Assisted Language Learning on Iranian EFL Learners' Task-Based Listening Skill and Motivation. *Journal of Academic and Applied Studies*, 2(1), 39-61.
- Nuthall, G. (2000). The role of memory in the acquisition and retention of knowledge in science and social studies units. *Cognition and Instruction*, 18(1). Retrieved March 13, 2016, from Eric database.
- Prensky, M. (200). Digital natives, digital immigrants. *On the Horizon*, 9(5).

- Prinzessinnadia, R. (2013). ICT in English language teaching and learning [Blog post]. Retrieved from <https://prinzessinnadia.wordpress.com/2013/02/01/ict-in-english-language-teaching-and-learning/>.
- Roger, C., & Passey, D. (2004). *The Motivational Effect of ICT on Pupils*. Lancaster University. Research report RR 523.
- Tafazoli, D., & Golshan, N. (2014). Review of Computer-Assisted Language Learning: History, Merits & Barriers. *International Journal of Language and Linguistics. Special Issue: Teaching English as a Foreign/Second Language*, 2(5-1), 32-38.
- Ushida, E. (2002). How to be A Successful Online Language Student: *Assessing language learning strategies from learner's perspectives*. Paper presented at 13th World Congress of Applied Linguistics, Singapore.
- Warschauer, M. (2004). Technological Change and Future CALL. In S. Fotos & C. Brown (eds.), *New Perspective on CALL for Second and Foreign Language Classrooms*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Zahrah (2013). Benefits of using ICT in schools. Retrieved from <http://ictlearningin-schools.weebly.com/benefits-of-using-ict-in-schools.html>.