A Review on The Proper Integration of Technology into Pedagogical and Content Knowledge in ESL Setting

D.M.R.S. Dissanayake, Department of English Language Teaching, Wayamba University of Sri Lanka

Abstract
The Technological Pedagogical and Content Knowledge (TPACK) framework can be considered as the three pillars of 21st century education. The purpose of this review is to examine the TPACK framework in teaching English as a Second Language (ESL) setting and what it really means to integrate technology into Pedagogical and Content Knowledge in ESL. Viewpoints of educators and scholars around the world regarding the TPACK framework were discussed. The study reviled factors under few key areas; technology in teaching and learning, teaching English as a second language with technology, role of the teacher in technology integration, technology integration during the COVID-19 pandemic and what it really means to integrate technology in ESL setting. At the end of the review, it was suggested that true meaning of technology integration is not only using technological tools and devices to display learning materials in-class. It is the process of utilizing technology as a tool to enhance the teaching and learning where it creates room for the smooth communication and learning between peers and between the student and the teacher, even beyond the classroom.

Keywords- TPACK, Technology Integration, ESL, Education

1. Introduction
The term “integration” has been overused and misunderstood by many teachers around the word, especially in technology integration. Upon stepping into the 21st century, modern teaching and learning methodologies encountered a drastic shift. The introduction of the Technological Pedagogical and Content Knowledge (TPACK) framework, can be considered as the turning point of modern education. TPACK is the manner in which the teachers use technological aspects in their teaching. According to Harris (2009), the key purpose of the TPACK framework which was introduced as a theoretical framework, is to recognize the teachers’ knowledge required for the effective integration of technology. This provides a fertile ground for the teachers to recognize their own knowledge in technology and to find ways to develop this knowledge.

The relationship between Pedagogical and Content Knowledge (PACK) in teaching was initially brought to light by Cox (1987), where he examined the content and pedagogical knowledge as integral components in teaching. This association between the content and pedagogical knowledge was discussed by many scholars such as Brown & King (2000) and Sudzina (1997) over the years. However, with the advancement of technology and with the increasing demands and necessities in teaching and learning, another component was introduced to the PACK. With the emergence of a new generations, who are digital natives to 21st century, they started seeking the technological advancement in every aspect and education was no exception. Hence, to meet the demands, the ‘technology’ component was merged alongside the pedagogical and content knowledge. Koehler and Mishra (2009) introduced the Technological Pedagogical and Content Knowledge (TPACK) framework, and heighten the necessity of the technological integration in teaching along with pedagogical and content knowledge. This framework was able to develop the professional knowledge of the teachers so as to develop TPACK which is necessary for successful teaching especially for the students who are natives to the digitalized education. Hence, the introduction of
the TPACK framework has given the teachers a lush ground to deliver effective teaching and provide students a digitally advance learning experience. The TPACK framework which can be utilized by any teacher despite their teaching discipline. It could be science, music, geography, arts, humanities, language, engineering etc. Teaching with technology concern on the proper mixture of the three key components; technological knowledge, pedagogical knowledge and content knowledge (Mishra & Koehler, 2008). Technology could be effectively integrated into language teaching in many different ways. However, TPACK is not widely used in the language teaching setting (Bugueño, 2013), even though area specific TPACK is common. Poor integration of technology into teaching English as a Second Language (ESL) setting is rarely discussed (Bugueño, 2013) (Wu & Wang, 2015). According to Wu & Wang, (2015), usage of the TPACK framework in the English language teaching setting is not as strong as it is used in science or mathematics setting. Hence, this review will shed light on technology integration in ESL setting.

2. TPACK Framework

A proper assortment of content, pedagogical and technological knowledge in teaching is the goal of TPACK framework (Mishra & Koehler, 2008) (Harris et al., 2009). Hence, to obtain the maximum results of the framework, a balanced proportions of each component should be used. Although the majority of the teachers are familiar and competent with their content and pedagogical knowledge, few doubt their technological knowledge. According to Koehler & Mishra (2005), simple introduction of technology into teaching does not ensure the proper integration of technology and it will make no change. Teachers should use technology as a tool to enhance learning. Further Koehler & Mishra (2005) added, that the manner of technological integration could change the education and they view technology as a ‘knowledge system’. Teachers’ knowledge on technology is a part of their content and pedagogical knowledge. True technological integration is the enhancement of content and pedagogical knowledge with the assistant of technological tools.

Three components of the TPACK framework provide support to each other. Pedagogy is the teaching approach. Pedagogical knowledge is the teachers’ knowledge on the teaching approach.

![Figure 1- Three Pillars of 21st Century Education](https://ssrn.com/abstract=4062351)
they use to teach students. The teaching approach may vary depending on the content of what they teach. Teachers’ pedagogical practices directly affect the communicative capabilities among the students (Bugueño, 2013) (Al Khateeb, 2017). Pedagogical knowledge does not only refer to the teaching practice, it also refers to the ability of the teacher to manage the classroom, deal with different aspects in the classroom etc. (Harris et al., 2009) (Koehler & Mishra, 2005). Content knowledge of the framework refers to the teachers’ knowledge on ‘actual subject matter’ that the teacher is about to teach (Mishra & Koehler, 2006, p. 1026) and in ESL setting, it is the teachers’ knowledge on grammar, vocabulary and many other standards that are essential to teaching (Bugueño, 2013). Technological knowledge spreads from the teachers’ knowledge on using simple skill, for instance, ‘pencil and paper’ to the use of internet, digital videos, software programs etc. (Harris et al., 2009) (Koehler et al., 2007).

According to Wu & Wang (2015), TPACK is the combination of three key knowledge bases, technological knowledge (TK), pedagogical knowledge (PK) and content knowledge (CK). Even though technology, pedagogy and content are considered as three independent components, in TPACK they are co-dependent and sensitive to teaching setting (Koehler & Mishra, 2005). Hence, the implementation of TPACK consumes a deeper understanding of the underline connection between technological pedagogical, content and knowledge (Koehler et al., 2007). TPACK framework has given the teacher the freedom to create the environment suitable for the teaching and learning process (Aldama, 2018).

3. Technology in Teaching and Learning

Using technology in 21st century ESL classrooms have become an integral component and many researchers have proven that this integration has created a positive learning environment for the students (Al Khateeb, 2017) (Işman, 2012). Learning a language is far beyond than memorizing the grammar and fixed rules in the language. Collaboration with peers is vital in language learning. This process has made easier with the proper integration of technology into the classroom. In order to make the lesson more interactive and effective, teachers’ use several technological tools. Few are discussed below.

3.1 Films and video

Improving the students’ vocabulary and comprehension can be done via films and video (Cowie & Sakui, 2021). This allows the students to get an exposure to the natural manner of using the English language. The teacher can decide the type of film or video to be shared with the students depending on the level of the classroom. According to Khan (2015), the visual aspect of the film makes it a treasured language tool in the ESL classroom. The learner grasps the language in the film or the video and interpret the language in a visual context. It also enhances the listening skill of the learner as they try to understand the context in the video or film by listening. The study has brought to light that the effective usage of films in the ESL classroom take place when the teacher presents the film in an innovative manner. They conclude that the infusion of audio and video technologies into the ESL classroom could lead to the growth of second language acquisition of the learner. Further, the study conducted by Whatley (2012), indicates that the learner enjoys the learning process when video or film is integrated. It is the responsibility of the teacher to engage the students with the film and achieve the learning outcomes of the targeted lesson. The teacher can give challenging, yet achievable learning tasks.
3.2 Apps
Using smart applications are not a novel experience for the 21st century learner as they are natives to the digital world. Apps are a great way to practice language, especially components like grammar. According to the survey conducted by Steel (2012), it shows that students use various mobile applications to support what they are learning in the classroom. The learner approaches these applications due to its user friendliness, accessibility and ease of downloading. Most common applications among the learners are dictionaries, translators, flashcards and vocabulary games (Mindog, 2016). More than 45% of the learners use the mobile phones to access the apps and websites (Watanabe, 2012). Hence, it is evident that the students are keen on using apps to support their learning. Easy access from anywhere is the key behind the higher demand for mobile applications. Therefore, the teacher could take this as an advantage and promote language learning via apps and direct the learner to achieve the learning outcomes of the lesson.

3.3 Digital field trips
The term ‘digital field trips’ is novel to the teaching and learning environment. However, digital field trips or virtual reality tours are rarely used in language classrooms due to less technology available for such expeditions. However, it is a technological way to provide border knowledge to the students via internet. This is a process of taking the students on a virtual tour designed based on the lesson. According to Watanabe (2012), virtual reality is still at its infancy in language teaching and learning classrooms. Further, the role of the teacher in digital field trips or virtual reality tours, is huge. The tour will be an effective one depending on how the teacher integrate his/her content and pedagogical knowledge into the digital field trip.

3.4 Podcast
Podcast is a great way to improve students’ listening skill and by creating podcast they can improve their speaking skills. Availability of free podcast online, has given the teacher a good selection over the podcasts in classroom. However, the trend of using podcasts in ESL teaching is still at its initial stages. According to Alizadae (2019), both general and profession podcasts can be used in ESL teaching and learning process. Further, he suggests that podcast is one of the novel strategies for teaching ESL and that it could gain the attention and improve the interest of the learner in an effective manner. Special features such as; authenticity, multilevel learning, promotion of intrinsic motivation and effectiveness, has made the podcast in ESL teaching setting more interesting. Further, the study of Chaikovska (2019), recommend teachers to use profession-based podcast to improve students’ listening and speaking skills. Further, the study highlights the fact that podcast could improve students’ vocabulary and encourage students’ independent learning.

3.5 Web quests
It is the view of majority of educators, for instance Kocoglu (2010), Aydin (2016) and Dynarski (2008), that WebQuests are a great source to improve reading and writing skill of the learner. When the learner is engages in web quest task, he/she perform several tasks at once; search the information, read and write and the study encourages the language teachers to integrate WebQuest in their reading and writing instruction as it could improve the students’ knowledge on vocabulary and overall reading and writing performance (Kocoglu, 2010). WebQuest is a good way to enhance the linguistic and extra-linguistic knowledge and it is effective in learning new vocabulary and uplift the reading skill (Aydin, 2016).

3.6 Online games

Electronic copy available at: https://ssrn.com/abstract=4062351
Game based teaching and learning is a popular pedagogical approach (Dissanayake et al., 2020) for a long period of time. With the advancement of technology, the integration of games into the teaching and learning process has also elevated. Gamification is a successful pedagogical strategy in ESL education setting. The proper combination of technology-based games into ESL setting could create effective teaching environment (Figueroa Flores, 2015). According to Yunus & Hua (2021), online quizzes can be utilized as online game to expand students’ knowledge. Further, online games foster intrinsic motivation and assist the learning process (Figueroa Flores, 2015). The active participation of the students in online games motivate the learner and create a fertile ground for the teacher to implement content and pedagogical knowledge.

3.7 Blogging
Among many strategies to engage students in writing, blogging is one of the best ways (Youseffifard & Fathi, 2021) (Mai & Bao, 2020). According to Sudzina (1997), students have positive feedback over using blogging in the ESL classroom and believe that blogging has merits as an instructional tool in ESL classroom. In Pazilah (2019) study, the researcher indicates that blogs assist the teacher in the delivery of instruction for writing and it has found that blogging has the capacity to solve issues related to students’ confidence. Further, Jones (2006) also indicates that blogs can be an effective technological tool to be used in an ESL classroom to enhance students’ writing skill.

3.8 Audiobooks
Utilization of audiobooks in a wide range of education levels could be seen in recent past. This reading supplement, enhance not only the listening skill of the learner but also the reading skill (Talalakina, 2012). However, according to J. Moore & Cahill (2016), use of audiobooks by adolescents are less and need more promotion for the use of audiobooks. On the other hand, the findings of Başaran & Köse (2013) indicates that the impact of audiobooks on English language learning are at a higher rate and it improves students’ listening comprehension, pronunciation and motivation. Integration of technological tools into the teaching process could enhance the teaching and learning process. Few modern technological tools which can be used to uplift the learning environment are discussed above. Technology assists the teacher to achieve novel levels of productivity. Not every student learns the language in the same manner, hence the teacher could use the technology to help the learner achieves the learning objectives smoothly and effectively.

4. Teaching English as a Second Language with Technology
The English language acquires a prominent place among the languages in the world as it is widely spoken by people. Approaches to teaching English as a second language has evolved over time with the advancement of the technology. Teaching and learning frameworks such as computer assisted language learning (CALL) and technological pedagogical and content knowledge (TPACK), came into being to assist teachers to adjust and develop the teaching skills integrated with technology (Wu & Wang, 2015). Ample of researchers focus on TPACK and CALL, but few have focused on TPACK in ESL setting. According to Schweizer (2003), Dynarski (2008) and Ross (2004), infusion of technology into language teaching is a difficult task which takes place not at a rapid speed. Further, despite the speed of the infusion, it has no or less impact on the teacher or learner. Although the researchers on ESL and technology integration (Harris et al., 2009) (Wen & Hua, 2020), agree on the point that technology could elevate the pedagogical and content knowledge of the teacher and that it could create an effective learning environment for the student, their approaches on in technology integration varies.
4.1 Technological Knowledge (TK)
Professional knowledge of the teacher is a key segment. In the TPACK framework, technological knowledge (TK) of the teacher assists him/her to deliver the content with effective pedagogical method. Even though, teachers are digital immigrants where students are digital natives, the teacher’s capacity to provide knowledge via technology is vital. Ample of teaching resources are available online. Hence, having TK will help the teacher to bring the outside knowledge into the classroom (Mishra & Koehler, 2008). Especially, for an ESL classroom, enhancing the speaking and listening skills of the learner is imperative. Hence, technology could support the teacher to create more authenticate English environment. The content knowledge alone will not bring this authenticity into the classroom. Pedagogical knowledge infused with technology could result in an effective ESL teaching (Ekrem & Recep, 2014).

4.2 Technological Content Knowledge (TCK)
The technological content knowledge is the ‘formal knowledge’ or what is frequently referred to as ‘the knowledge base’ (Cochran-Smith & Lytle, 1999, p. 254). In the ESL setting the knowledge on the English language is the content knowledge. In the process of selecting, editing and infusing technology into content knowledge, it should match with the content (Mishra & Koehler, 2008) (Koehler et al., 2007) (Koehler & Mishra, 2005). Hence, the higher the level of technological knowledge of the teacher, higher the effectiveness of TCK in ESL teaching. Simply, it the knowledge on how the teacher interpret the subject matter using available and suitable technologies (Abdul Rauf et al., 2021). For instance, showing the rules of verb conjugation in simple past tense.

4.3 Technological Pedagogical Knowledge (TPK)
The teaching approach differs from lesson to lesson. Selection of the best pedagogical method will facilitate students’ learning in an effective manner. However, the integration of technology into pedagogical knowledge could boost the results. The teachers’ ability to utilize a range of technological tools, the proper selection of the tool based on its suitability and the knowledge on teaching strategies and application is the TPK (Mishra & Koehler, 2008) (Koehler et al., 2007) (Koehler & Mishra, 2005) (Nilsson, 2008). Further, in the process of utilizing the technology, the teacher has the ability to explore novel dimensions in teaching and learning process with instant accessibility to modern information. The proper infusion of technology into teaching allows the teacher to understand the learning needs of the students who are natives to the digital technological world.

Integration of technology into the ESL classroom could create an active learning environment. The age limit is not a barrier when infusing technology into the learning and teaching process. The
teacher’s ability to create the different layers of learning experience via technology can be a novel experience for the students. In this process, the motivation of the teacher is a key. As in a traditional classroom, a classroom with technology could provide the students the best learning experience. However, the purpose of using technology in the classroom is vital. Even though there are ample of technological tools, selecting the most suitable tool for the lesson is not an easy task.

Table 1- Technological tools in an ESL classroom

<table>
<thead>
<tr>
<th>Skill</th>
<th>Tool</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listening</td>
<td>Audiobook</td>
<td>(Talalakina, 2012)</td>
</tr>
<tr>
<td></td>
<td>Broadcasting</td>
<td>(Basheer Nomass, 2013)</td>
</tr>
<tr>
<td></td>
<td>Use of CD-Players</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Use of Tap-Recorders</td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td>Computer Reading-Based Programs</td>
<td>(Basheer Nomass, 2013)</td>
</tr>
<tr>
<td></td>
<td>Multimedia Software</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Browsing the Internet</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electronic Dictionaries</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quick Link Pen</td>
<td>(Kuning, 2019)</td>
</tr>
<tr>
<td>Speaking</td>
<td>Internet Voice Chatting</td>
<td>(Basheer Nomass, 2013)</td>
</tr>
<tr>
<td></td>
<td>Speech Synthesis Programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Speech recognition software</td>
<td>(Kuning, 2019)</td>
</tr>
<tr>
<td></td>
<td>Skype</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MSM Messenger</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Google talk</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pod Casting</td>
<td></td>
</tr>
<tr>
<td>Writing</td>
<td>Computers</td>
<td>(Basheer Nomass, 2013)</td>
</tr>
<tr>
<td></td>
<td>Writing E-mails</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Internet Text-Chatting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quick Link Pen</td>
<td>(Kuning, 2019)</td>
</tr>
<tr>
<td></td>
<td>Digital dictionary</td>
<td>(K. A. Moore et al., 2016)</td>
</tr>
<tr>
<td></td>
<td>Electronic spell checkers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weblogs</td>
<td>(Jones, 2006)</td>
</tr>
</tbody>
</table>

The table 1 demonstrates the tools teachers utilize in ESL classrooms to teach the key skills; reading, writing, listening and speaking. According to Wu & Wang (2015) teachers use technological tools to display information in the classroom. Hence, the proper selection and combination of technological tools with the targeted learning outcome could result in effective teaching with effective technology integration (Aldama, 2018). Rittel & Webber (1973) once in his research indicate the technology as wicked problem, heightening the key role played by the technological tool in the classroom.
5. Role of the Teacher in Technology Integration in ESL Setting

Integration of technology has opened many doors for the learner to explore. It has developed both the teachers’ skill and the learners’ knowledge (Frigaard, 2002). Technology is the intermediator in the transformation process of the knowledge from the teacher to the learner. However, according to the research conducted by Messina & Tabone (2012), even after the training sessions on how to integrate technology into the ESL setting, only 30% of the teachers have admitted that they have infused the TPACK framework in the ESL setting. Further, the teachers tend to omit the technology infused teaching approach to the lesson and only focus on the content and the technological tools as separate items, which would result in improper integration of technology. Further, teachers display less confidence in knowledge related to technology and infusion of technology with content and pedagogical knowledge. However, the integration of technology into the lesson with content and pedagogical knowledge should be done in a creative manner by the teacher (Messina & Tabone, 2012). This is because, the selection of the most suitable technological tool for the specific content area to be teach will ruin or enhance the understanding of the learner on the content (Harris et al., 2009). According to Harris et al. (2009) and Mishra & Koehler, (2008), technology is able to change the way the teacher approaches the lesson. The teachers’ content knowledge is the key force behind selecting the technological approach for the lesson. Blending of knowledge so as to make the lesson more comprehensible for the learner should be the goal of a good teacher (Cox, 1987). Accordingly, the selection of the suitable technological tool for the lesson solely lies with the teacher. The teacher’s content and pedagogical knowledge will help to decide the technological tool. When selecting the technological tool, the teacher should focus on two key areas as, the content and level of the students.

![Figure 3-Factors for proper technology integration](https://ssrn.com/abstract=4062351)

Effective infusion of technology can be done only when the teacher is ready to incorporate pedagogical knowledge, content knowledge along with the better selection of technological tools, suitable learning environment and by considering the level of the students. Integration of technology does not only include machines and instruments, it is a combination of humans, machines and the learning environment (İşman, 2012). Technology act as an assistant for the teacher to create an effective learning environment. Hence, the novel experience and exposure to the technology away from traditional pen and pencil will help the students to uplift their
Proper integration of technology will improve the learner’s individual as well as group learning capacities (Ahmadi, 2018). The integration of technology has changed the pedagogical approach of the teacher (Shyamlee & Phil, 2012) (Gilakjani, 2017) (Patel, 2013). Lack of technological knowledge of the teacher will not create a good technological learning environment. Many scholars have highlighted the fact that teachers lack technological knowledge (Al Khateeb, 2017) (Messina & Tabone, 2012). In examining the study done by Al Khateeb (2017), it is evident that majority of the teachers classify as basic level users of technology where they have less knowledge in information processing, content creation, communication etc. According to Messina & Tabone (2012), apart from less technological knowledge, teachers also lack talent in planning and taking decision in teaching approach and they are skeptical about their technology integration skill. Harris et al. (2009) also brings to light the fact that, the teachers lack the knowledge in technological and it is not infused into the curriculum-based teaching and learning. This is challenging for the teachers as they deal with students who are natives to the digital applications. Further, the teachers utilize the technology as a mean of displaying facts in the classroom, managing instruction and learning subject matter (Wu & Wang, 2015) (Messina & Tabone, 2012). Moreover, many teachers believe that technology provide a good language input.

6. Integration of Technology during COVID 19
Several factors affect the growth of COVID-19 pandemic (Lulbadda et al., 2021), and it impact almost every activity we do, and education is no exception. Integration of technology into education boosted as never before. It is a sudden shift from small scale technology integration to large scale compulsory technology integration. The pandemic has already changed the education and especially the teaching. Teaching and learning process had underwent a drastic change from K-12 to higher educational institutes. Shifting of traditional face-to-face classrooms into fully online classrooms has been a hug challenge for both teachers and learners. Educational institutes around the world employed the online teaching methodology so as to facilitate the learning process (Wen & Hua, 2020). For instance, Ministry of Education Malaysia encourage the teachers to use educational technologies such as Google Classroom (Lu-akyol, 2018). Teachers around the world have been using several online teaching platforms for the teaching process. Amon them, ZOOM, Microsoft Teams, Google Classroom are prominent (Romero-Ivanova et al., 2020). According to Tinungki & Nurwahyu (2020), Google Classroom can be considered as an effective learning platform with advanced technological tools for teaching. On the other hand, Lowenthal (2020) indicates that the students have a positive respond towards learning via the ZOOM platform. Microsoft Teams is another emerging platform teachers use during the COVID-19 pandemic and widely used platform due to its user-friendly techniques (Pal & Vanijja, 2020). Overall, the usage of ZOOM, Microsoft Teams, Google Classroom are now in the drive and will continue to grow with the current online education.

Table 2- Modern teaching platforms

<table>
<thead>
<tr>
<th>Tool</th>
<th>Features</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Teams</td>
<td>Unified conversation platform</td>
<td>Ilag B.N. (2020)</td>
</tr>
<tr>
<td></td>
<td>Open chat</td>
<td>(Rojabi, 2020)</td>
</tr>
<tr>
<td></td>
<td>Optimal call quality support sharing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Easy interaction between peers</td>
<td>(Rojabi, 2020)</td>
</tr>
<tr>
<td>Easy student teacher interaction</td>
<td>Flexible group formation</td>
<td>(Martin &amp; Tapp, 2019)</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>--------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td><strong>Zoom</strong></td>
<td>Flexible group activities</td>
<td>(Kohnke &amp; Moorhouse, 2020)</td>
</tr>
<tr>
<td></td>
<td>Poll</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ability to share the screen</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ability to provide individual feedback via ‘chat box’</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Easy access</td>
<td></td>
</tr>
<tr>
<td><strong>Google Classroom</strong></td>
<td>Flexible interaction between teacher and student</td>
<td>(Sukmawati &amp; Nensia, 2019)</td>
</tr>
<tr>
<td></td>
<td>Ability to provide individual feedback</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Easy access</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Easy interaction between peers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Easy access to lesson materials</td>
<td></td>
</tr>
</tbody>
</table>

Hence, with the outbreak of the COVID-19 pandemic, teachers and students have automatically come to the point where they use technology for every aspect of their teaching and learning process. Using technological devices does not mean the proper integration of technology. However, higher usage of technological devices by both the teacher and the learner has created a fertile ground for technology integrated learning and teaching.

7. **Towards the Technology Integration**

Technology integration in ESL setting has turned the focus from teacher centered education to student centered education. In this methodology, students are no longer passive listeners, they are active participants. Infusion of technology into ESL teaching setting has brought advantages to the learner as well as to the teacher (Gunuç & Babacan, 2017) (Ahmadi, 2018). Independent learning of the student is highlighted in the study conducted by Hennessy (2005). There he indicates that technology is the new agent which brings motivation into the classroom. The learner becomes self-directed and the teacher support the learner to think and act independently.

Nevertheless, Harris et al. (2009) in their study has found that there is a mismatch between the vision of the leaders who create technology and the teachers who use it. Hence, the expected integration of technology is different from actual technology integration in the classroom. In their study, they suggest the necessity of the professional development for the teachers on technology. Similar suggestion is presented by Ahmadi (2018), where they suggest that the technology integration should be aligned with the curriculum standards.

However, throughout the time, the idea of technology integration has faced many changes. According to Gilakjani (2017) and Hew & Brush (2007), technology integration is defined based on the technological tools used by the teacher in the classroom. Cuban et al. (2001) defined the technology infusion in terms of the manner in which the teacher uses the technology in the class. In the view of Pine-Thomas (2017), technology integration is vital due to many reasons, such as; its ability to bring depth into the content-area syllabus, its ability to drive the learner towards application and analysis of the information etc.

Electronic copy available at: https://ssrn.com/abstract=4062351
8. Discussion

TPACK framework is no longer a novel concept for educators around the world and can be considered as the three pillars of modern education. However, seeking the real meaning behind technology integration and how educators could successfully integrate technology into their lessons are challenging. In such context, this review on literature will provide a meaningful definition for the process ‘technology integration’.

When analyzing the above papers, few areas could be identified which discuss the true meaning of technology integration in an ESL classroom. Most importantly the inclination of the teacher to use technological tools only inside the classroom. Learning is a lifelong process. The true sense of technology integration is not only using technological tools inside the classroom. A proper integration of technology does not stop at the doorstep of the classroom. It creates space for the student to learn at ease. For instance, using PowerPoint presentations, websites for in class reference, limit the technology usage to the classroom. The teacher could create a methodology with the available advanced technology, to engage the student to the lesson even when they are at home without making the student stress about learning everything in-class. For instance, videotaping the lessons and activities in the class and sharing it with the students will allow them to have a clear idea about what they have been doing. Also, allowing students to comment on each other’s work via online will improve learning. It provides self-reflection. This comfortable learning environment will enhance the learning of the students. When teaching a large class, paying attention to each student is challenging. Even in a face-to-face class, if the teacher could run an online platform to comment and ask question, the teacher could focus on each and every student despite the size of the class. This will make the large class, a small class. The students will feel that they are a part of the group and this sense of belonginess could enhance their learning process.

![Figure 4- Extended Technology Integration](https://ssrn.com/abstract=4062351)
Secondly, the knowledge of the teacher on technology, was found as a key factor. The lack of knowledge of the teacher on technology directly impact the process of technology integration in the classroom. It is necessary to provide the assistance of technology experts for the ESL teachers to understand the ways of integrating technology into the ESL classroom.

Thirdly, the selection of the appropriate technological tool by the teacher affects the proper integration of technology in an ESL classroom. The fact that the students are ‘digital native’, does not indicate that they are competent in using any technological tool to achieve any task in the classroom. Using their knowledge on technological tools as an advantage, the teacher should guide them in using those technological tools to learn the language. Poor interaction of the students in the classroom with the technology, will only create a teacher centric classroom environment. Technological tools should create a common ground where both teacher and student can mingle. This will allow the technology to revolve around the students and create a student centric classroom. Hence, utilizing student centric teaching and learning methods such as, game-based teaching, projects, explorations etc. allow the students to actively participate in classroom activities. Hence, the proper selection of technological tool by the teacher is important.

9. Conclusion
This review of literature is an attempt to identify what it really means to integrate technology in ESL classroom setting. It was discovered that proper integration of technology is a combination of three key components. They are the teachers’ preparedness to use technology beyond the classroom, adequate knowledge of the teacher on technology and proper selection of technological tools. Fulfillment of all these components will result in proper technology integration in ESL classroom setting.

In the face of technological advancement, taking education a step forward with proper integration of technology will open new doors for students to explore more. Especially in an ESL classroom,
limiting technology usage to the four walls of the classroom will not uplift the knowledge of the students. Extending technology beyond the classroom is the key methodology that could be used to enhance the English language learning of the digital native students.

Reference


Frigaard, A. (2002). Graduate School of Winona State University in partial fulfillment of the requirement for the degree of Master of Science Department of Education 3EST COPY AVAILABLE.


https://doi.org/10.1016/j.compedu.2005.11.012


Lu–akyol, P. K. Ğ. (2018). USING EDUCATIONAL TECHNOLOGY TOOLS TO IMPROVE LANGUAGE AND USING EDUCATIONAL TECHNOLOGY TOOLS TO IMPROVE LANGUAGE AND United States culture was created through a blending of the many different people that live in the better jobs. More than that of any ot. *November.*


