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Teachers' and students' perceptions on introducing the SAMR model into their classroom

Percepciones de docentes y estudiantes al introducir el modelo SAMR en sus clases

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ABSTRACT

This article focuses on understanding the perceptions of 31 Ecuadorian teachers and 34 Ecuadorian university students about the Puentedura Substitution, Augmentation, Modification, and Redefinition (SAMR) model in the English class. It has helped teachers integrate technology into their classes. The tool used to evaluate the model consisted of 20 items with 5 questions for each SAMR dimension. The reliability of the model was measured with McDonald's ω (0.94) in a general context and each dimension (S: ($\omega=0.88$), A: ($\omega=0.82$), M: ($\omega=0.85$) R: $\omega=0.87$)). The results on the perceptions of teachers and students were very enlightening to understand how they implement technology in English classrooms before and after the pandemic. They consider the use of technological tools to be beneficial for learning English as a foreign language.

Descriptors: Second language instruction; educational technology; multimedia instruction. (UNESCO Thesaurus).

RESUMEN

Este artículo se enfoca en entender las percepciones de 31 profesores y 34 estudiantes universitarios ecuatorianos sobre el modelo de Puentedura Sustitución, Aumentación, Modificación y Redefinición (SAMR) en la clase de inglés. El mismo ha ayudado a profesores a integrar la tecnología en sus clases. La herramienta utilizada para evaluar el modelo consistió en 20 ítems con 5 preguntas para cada SAMR dimensión. La confiabilidad del modelo se mido con McDonald's ω (0.94) en un contexto general y cada dimensión (S: ($\omega=0.88$), A: ($\omega=0.82$), M: ($\omega=0.85$) R: $\omega=0.87$)). Los resultados sobre las percepciones de docentes y estudiantes fueron muy esclarecedores para comprender como ellos implementan la tecnología en las aulas de inglés antes y después de la pandemia. Ellos consideran que el uso de herramientas tecnológicas es beneficioso para el aprendizaje del inglés como lengua extranjera.

Descriptores: Enseñanza de una lengua extranjera; tecnología educacional; enseñanza multimedia. (Tesauro UNESCO).

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INTRODUCTION

Nowadays, people use digital devices to look for information on the internet. So, technology has been part of peoples' lives for centuries changing their daily activities, which can be done by using mobile phones, computers, and other devices (Hamilton et al., 2016). In Ecuador, internet use has risen to a 1,5% in 2020 (Alvino, 2021). This boost in the last year is mainly due to the global health emergency (Alvino, 2021; Khatoony & Nezhadmehr, 2020). Many people had to work and study at home using more online connectivity (internet) for their activities.

Technology and education have been working together in recent years; it has also been a powerful tool for teachers and students in their teaching-learning process (Akcil et al., 2021; Eady & Lockyer, 2013). During the pandemic, teachers have used technology in their classrooms, using different methodologies to help students develop and increase their language skills (Khatoony & Nezhadmehr, 2020; Serhan, 2020).

Many educators believe technology integration is a challenge (Khatoony & Nezhadmehr, 2020). They have little preparation for implementing Information and Communication (ICT) tools into the classroom (Sindi-Alivi, 2019; Trust & Whalen, 2020). Consequently, teachers and students were not using ICT tools and models like Substitution, Augmentation, Modification, and Redefinition (SMAR), The Technological Pedagogical Content Knowledge (TPACK) in teaching and learning tasks.

Teachers are more open-minded regarding technology integration in the class than before (Ondrashek, 2019). Also, students are eager to use digital tools inside and outside the classroom (Hashim, 2018). Moreover, teachers and students can use various technological means to create a better communication channel by using e-mails or chats through social media for immediate responses to questions and other matters related to the English classes (Sindi-Alivi, 2019). The benefits for teachers who use ICT have increased, making them more aware of it in their classrooms (Serhan, 2020). Usually, teachers replace manual tools with digital tools that help them in their teaching process (Seddiki, 2016).

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For instance, teachers use little technological resources during face-to-face classes. However, during the outbreak of Covid-19, they faced the need to integrate ICT into their teaching-learning process (Hebebcı et al. 2020). Using ICT tools like the SAMR model help teachers and students change manual devices into technological tools to facilitate technology integration into the English classroom (Sindi-Alivi, 2019).

The SAMR framework uses hierarchy levels to integrate technology into a classroom (Zimmerman, 2018). First, it starts with the lowest level Substitution to the highest level, Redefinition, which has helped teachers evaluate and blend ICT into their teaching process (Sindi Alivi, 2019), (Mabuan, 2018) points out that technology integration is beneficial for students who can create new experiences in their learning process by applying technology to tasks that they consider inconceivable.

Technology integration using the SAMR model and EFL classroom has appeared in various research around the globe (Aldosemani, 2019; Andrei, 2014; Banitt et al., 2013; Drugova et al., 2021). Not many studies were found in this context in Ecuador and Latin America EFL classrooms (Checa-Medina, 2021; Tovar-Viera Rodrigo, 2019; Velásquez-Muñoz, 2018). For that, the current study attempts to clarify and understand the perceptions of teachers and students in integrating technology into the English language classroom and the integration process using the SAMR model.

It is essential to specify the following research questions to help later collect the necessary data for the study.

1. What are the students' and teachers' perceptions on using technology before and after the pandemic?
2. How do teachers integrate technology using the SAMR framework into the classroom?

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DEVELOPMENT

Technology integration models and the SAMR model

Nowadays, teachers have many technological tools to help them integrate ICT into their classes. According to (Aldosemani, 2019), the technology integration's level can be measured with various instruments, including the Technology Integration Matrix (TIM), TPACK, The SAMR model, and others. Teachers use these models to facilitate technology integration into a classroom, which is easy to implement in some cases.

For instance (Tunjera & Chigona, 2020), state that "the SAMR model describes the process of adopting a technology from acquisition to a point when the art is incorporated into one's everyday practice, i.e., the art of appropriating digital technology into ones' teaching practice for targeted outcomes" (p. 128). This statement helps explain the meaning of the SAMR model and who created it in further detail.

(Puentedura, 2006) started designing a model that helps people integrate technology into their respective activities; he focused on any company implementing ICT. In 2003, he created a weblog and shared his opinions on technology integration. His vast experience in education allowed him to develop the SAMR model and present it at a conference in 2006.

This model contains four steps that help to infuse technology in education. The four steps are Substitution, Augmentation, Modification, and Redefinition; they are categorized into two levels enhancement and transformation. The first two levels are enhancements, including Substitution and augmentation; the last two levels are transformation and include modification and redefinition (Aldosemani, 2019; Hamilton et al. 2016). The model is shown in figure 1 bellows

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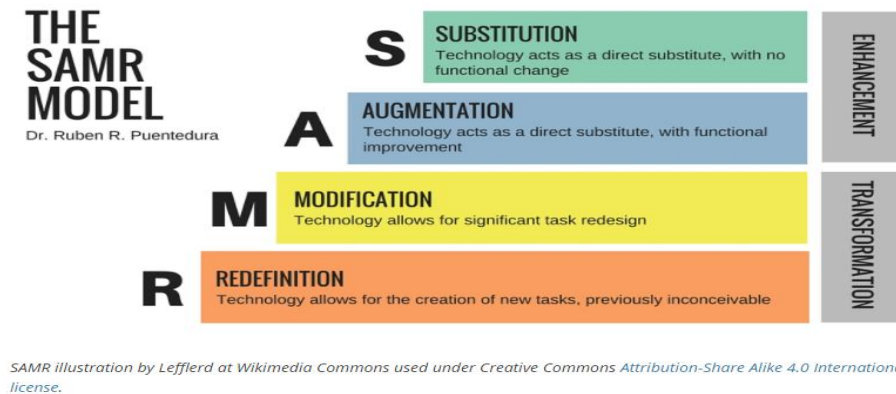


Figure 1. The SAMR model by Dr. Puentedura.
Source: Winkelman (2020).

The first dimension or step is Substitution; it acts as a direct channel to change the traditional tools into digital ones. For example, hanging out printed materials changed with Google Docs or any pdf format sent via e-mail (Sindi Alivi, 2019). The Augmentation dimension also substitutes technology by allowing teachers and students to use it differently. For example, teachers deliver a task to students, and they have to use technological devices to finish the activity (Hamilton et al., 2016). Teachers need to implement tasks with higher thinking skills using technology for the last two dimensions (Modification and Redefinition). For example, a group of students writes an essay using the ICT tools like GoogleDocs, which help them work together immediately on the task (Sindi Alivi, 2019).

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The SAMR model and Bloom's Taxonomy.

It seems that scholars argue among some similarities between the SAMR model and Bloom's Taxonomy. According to (Nyayu et al. 2019), the simple SAMR model is undoubtedly reminiscent of an early model in cognitive education, which parallels Bloom's taxonomy model, commonly used as a learning tool. These two models depend on how teachers integrate technology according to their possibilities and knowledge for the learners (Netolicka & Simonova, 2017; Šimonová, 2016), (Puentedura, 2014), indicates that the association among these models makes it possible to connect the SAMR levels with Bloom's Taxonomy pyramid. For Substitution and Augmentation with the three lowest levels of Bloom's Taxonomy (Remember, Understand and Apply). For Modification and Redefinition with the three upper levels of Bloom's Taxonomy (Analyze, Evaluate, Create). However, this combination of the SAMR model and Bloom's Taxonomy is easy for teachers who are starting to integrate technology into classrooms. Figure 2 shows the way to integrate technology using both models.

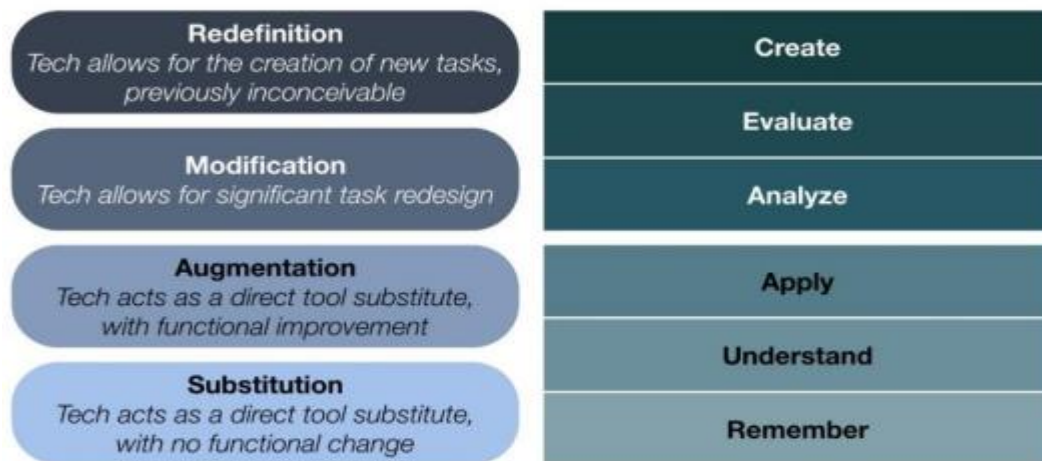


Figure 2 The SAMR model by Dr. Puentedura and Bloom's Taxonomy.
Source: Sindi-Alivi (2019, p. 5).

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The SAMR model applications.

The SAMR model has been a great help in integrating technology into a classroom and in different situations. It depends on the way teachers or professionals use the model to facilitate technology integration. As Drugova et al. (2021) claim, the SAMR model is also context-specific by using technology in different tasks, allowing teachers to implement the model's four steps, from Substitution and Augmentation to modification and Redefinition. Even though the model appears to be a ladder, that does not mean the levels are hierarchical, showing that it is unnecessary to follow from the lowest to the upper levels. In this case, it depends on how teachers integrate technology using the SAMR model. The SAMR model describes how teachers can implement technology in their classes; it incorporates art into everyday activities. In other words, using technology is seen as an art of implementing digital resources into educational practices to achieve the goals of the class (Tunjera & Chigona, 2020). This model intends to inspire teachers to use technology to optimize their activities in the classroom (Wahyuni et al. 2020).

Technology integration as part of education.

The evolution of technology has influenced education in recent years. Its emergence and technological development have helped teachers implement various specialized applications to fully effective education (Hashim, 2018).

Technology is a powerful tool that students can use to investigate any topic studied in a class by exploring and learning about it. Consequently, it is possible to incorporate it in and outside the classroom by allowing teachers and students to blend traditional classes into specialized courses using technological tools (Samperio-Pacheco & Barragán-López, 2018).

Teachers must not forget the main aim of the classes. Even if they use technology, they have to clarify the learning goals to students and create meaningful and interactive lessons to effectively students' learning (Howlett et al. 2019). Technology encourages teachers and students to develop collaborative learning environments and integrate

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learning opportunities to exchange ideas for an exercise, and they need to provide feedback on their performance after incorporating ICT tools into English classrooms (Hashim, 2018).

Teachers and students use technological tools in their teaching-learning process applying the SAMR model.

Teachers and students have faced many challenges implementing digital tools and the SAMR model in their teaching-learning process (Serhan, 2020). Therefore, they were forced to implement technological devices during the pandemic, which created a real challenge while applying many technological applications and methodologies for students to learn the language (Lie et al. 2020).

Banitt et al. (2013) argue,

to teachers, it seems that today's students demand new, innovative learning methods that bridge the digital divide between them in-school and out-of-school lives. For educators, this means fusing proven pedagogy and curriculum with technology integration in creative, meaningful, and engaging ways (pp. 2–3).

In a way, the new generation of learners do not learn the same way as in the past (Ondrashek, 2019); with this argument, teachers need to find creative and exciting ways to teach English (Banitt et al. 2013). It also shows the importance of training teachers to integrate technology into the class to identify weaknesses or strengths in their students' technological learning process (Çakmak, 2019).

According to figure 1, the model represents a ladder in which teachers can follow it. As for modification, it requires elevating students' and teachers' thinking skills (Hamilton et al., 2016). This level is for a significant tasks redesign, for example, using google docs to implement collaborative writing among students (Cajamarca-Torres et al., 2020). They will be able to evaluate and give feedback to other writing assignments in the class (Buchem et al. 2012). Moreover, the final level redefinition emphasized students' creativity by

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developing tasks that were impossible to do before (Warsen & Vandermolen, 2020). For example, they can record a video for speaking practice and post it on a WhatsApp group. Other students can review and give feedback writing in English (Sindi-Alivi, 2019).

METHODOLOGY

This research uses a mixed-method study design, which helps to collect both qualitative and quantitative data. According to (Creswell, 2014), "the mixed-method approach employs these strategies of inquiry: pragmatic knowledge claims, sequential, concurrent and transformative mixed method" (p. 47). Therefore, the concurrent method design is more suitable for this research because it uses qualitative and quantitative data to generate and comprehensively analyze the research questions. The questionnaires will have semi-structured and open-ended questions (Choy, 2014). The online surveys are sent simultaneously to gather all the needed information for the analysis of the study. The technology integration is based on the SAMR model. The participants of this study are students and teachers from different higher education institutions in Ecuador. For instance, we have collected a sample of 31 teachers and 34 students using an online survey based on google forms.

After a month, the surveys were completed by 31 teachers from seven Ecuadorian universities. Most of the teachers are from the Catholic University of Cuenca (35.48%), followed by Cuenca University (35.48%) and others (29.05%). The participants are 48.8% women, and 51.6% men with a range from 26 years old to 56 years old, which gives an average of 41.26 years old of the teachers (the standard deviation (SD) is 7.87 years old). Most teachers have a working experience of at least five years teaching English as a Foreign language (87.1%). Another characteristic about the teachers is that almost everyone has some prior knowledge on integrating technology into the class (93.5%). Also, 64.5% of them include gamification in their classes, and 54.8% uses platforms or apps, among other resources.

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On the other hand, the students' survey raised to 34, of which 61.8% are women, and 38.2% are men. Half of the students are between 18 to 24 years old, and the other half are 25 years old or more. The majority of students (67.6%) have used any technology devices in their classrooms, such as mobile phones, tablets, or computers, which allows them to access apps, platforms, and webpages.

The tool used in this article to evaluate the SAMR was designed with 20 items with five items for each dimension. At a general level, the research tool meets a very high-reliability criterion. The results showed that the instrument has high reliability, which was analyzed by Cronbach's α and McDonald's ω with 0.94 for both tests. However, for this research, the McDonald's ω is used to have better results on the reliability of the tool, in this way, it was verified each of the SAMR dimensions which gives the following: substitution ($\omega=0.88$), augmentation ($\omega=0.82$), modification ($\omega=0.85$) y redefinition ($\omega=0.87$), which the tool gave and met the reliability that is needed for the study. The software used to get the reliability is JAMOWI which helps get the McDonald's ω (Love et al. 2021; Şahin & Aybek, 2019).

The Mann-Whitney u test and Student t-Test were used to comparing students and teachers regarding the data distribution of each step or dimension of the SAMR model. The level of significance or probability during the study is 5% ($p=0,05$), which helps to make a difference between one and others. In this way, $p < 0,05$, it is affirmed that there are differences; otherwise, they are equals. The results are illustrated with cloud diagrams accompanied by boxes and whiskers.

RESULTS

The result section shows three parts. The first is about students' and teachers' knowledge regarding the SAMR model. Then it shows the identification of technology types that teachers and students implement in their classrooms. Furthermore, the last one shows the teachers' and students' perceptions regarding technology use in their practice.

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Teachers and students' knowledge on using the SAMR model

Figure 3 mentioned that the first question on the teachers' survey was whether they had heard the model. Most of them answered that they definitely not and probably not have heard about the model with 45.2% and 22.6%, respectively. Only 32.3% of teachers said, according to the 5-point scale, that they possibly, probably, or definitely have heard about the model. Because this model is a tool that helps English teachers to integrate technology, the same question was not asked on the students' survey.

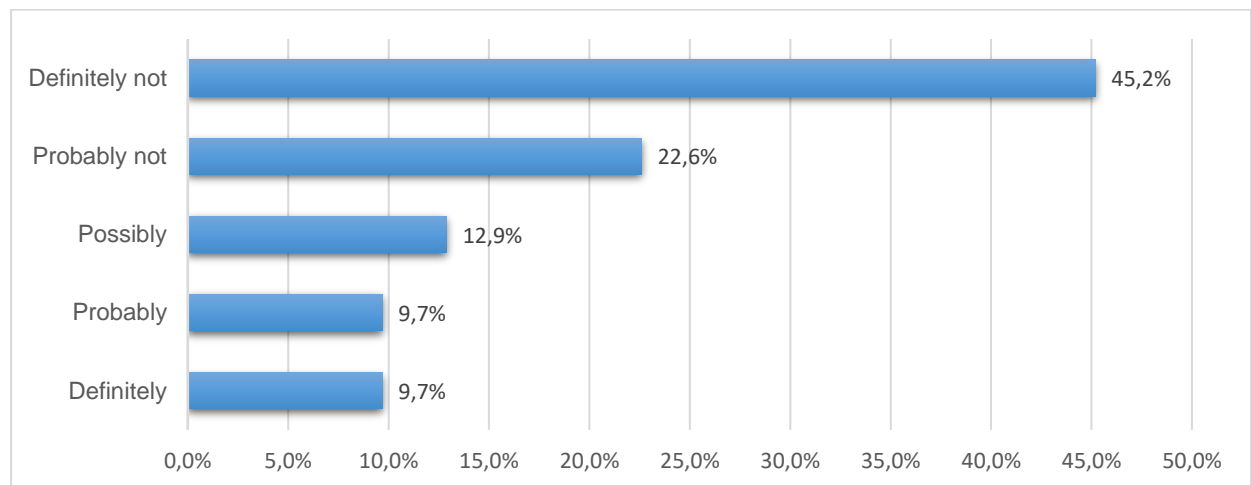


Figure 3. Have you Heard about the SAMR model to integrate technology in the class?
Elaboration: Authors.

Even though most teachers have expressed that they do not know the SAMR, it is expected that students also do not have any knowledge of it. The surveys showed that they both likely used the model unconsciously due to their daily involvement in using technological tools. It is essential to prove this assumption by studying the four characteristics of the model (Substitution, Augmentation, Modification, and Redefinition). It is compared the existence of different criteria among students and teachers in figures 4-7. Also, in this part of the study, teachers have shown an interest in using ICT in the

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class (Sindi-Alivi, 2019) disagrees that teachers are still not in favor of integrating technology in class.

The study's results point out whether teachers know the SAMR model; some of them genuinely have no idea about it, but they showed an indirect understanding of it. They have an open mind on using it in class. Moreover, the results can argue with (Howlett et al. 2019), which focuses on training teachers; he mentioned that some teachers knew about the model. Still, they tend to confuse the dimensions in practice.

The results presented in figure 4 are about the first dimension or level called Substitution. This dimension implies changing activities on paper-based into digital ones. For example, before using technology, teachers sent students homework on a paper-based in the class. With the technology, they could send the same task in a pdf format via email so students could print it out and do the activity. Consequently, on a 5-1-point scale, on average, teachers obtained a value of 3.81 points (SD 0.93). In comparison, students slightly reached a higher value of 3.61 points (SD 1.09), but it does not show a significant difference ($p>0.05$). The points of the clouds are similar, as is shown in figure 4. However, from the students' perspective, those clouds tend to be dispersed mainly in values 1 and 2, which could be corroborated with the upper whiskers box. This result is due to the criteria of students tend to be more dispersed than the teachers, but it does not necessarily mean lower. The trend in both cases clearly shows that they often integrate technology with the first characteristic of the SMAR model (Substitution).

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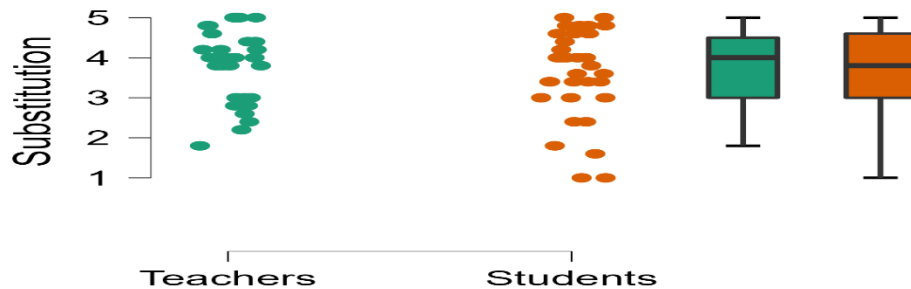


Figure 4. Raincloud diagram of the substitution in teachers and students.
Elaboration: Authors.

The results of the second step of the model, Augmentation, indicate the use of technology similar to the Substitution. In this case, Augmentation refers to the substitution of activities into technological activities. However, it has an impact on its use. For instance, teachers and students use different technological tools to replace traditional ones, improving their tasks' quality. For example, teachers substitute activities of their course-book with other activities using the internet. Students have to check new vocabulary in an online dictionary. Also, teachers use this model dimension to create an online test on different platforms. In this case, students and teachers will use email, social networks, platforms, and others. According to figure 5, teachers obtained an average of 4.05 points (SD 0.90), slightly higher than the students whose average is 3.74 points (SD 0.90). While applying the statistical test shows no significant difference between them; however, there is a tendency for teachers to be in a higher position ($p=0.054$). Therefore, teachers and students indicate that they often do activities using the second step of the model, Augmentation. This situation can be seen in figure 5, which shows the cloud diagram with teachers' points more positional in values 4 and 5.

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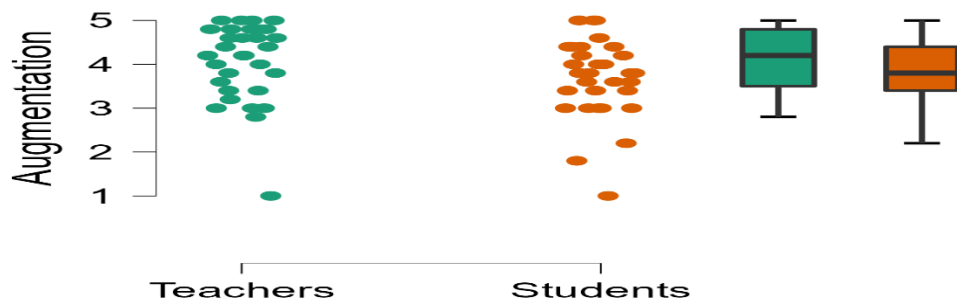


Figure 5. Raincloud diagram of the augmentation in teachers and students.
Elaboration: Authors.

The results in Figure 6 show the next dimension of the model, Modification, which indicates that teachers and students need to modify the activity throughout technology. For example, teachers before used the board and chalk, now they can substitute with technology tools, as they can use PowerPoints or Canva to present a topic in class. The Modification allows students and teachers to develop different resources to implement in the learning-teaching process. For instance, in figure 5, the results show a similar average on the dispersion of points with 3.28 (SD 0.97) and 3.26 points (SD 1.12), respectively, which implies that Modification is a practice that they sometimes implement during classes. According to the points of the cloud diagram, and the boxes and whiskers, the dispersion is very similar among teachers and students.

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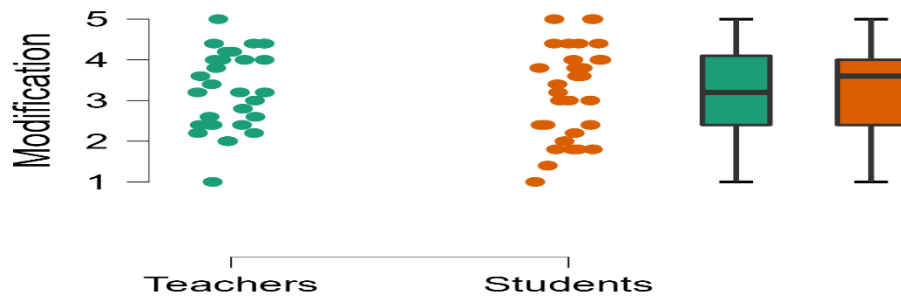


Figure 6 Raincloud diagram of the modification in teachers and students.
Elaboration: Authors.

Finally, the results on the last dimension, Redefinition, imply the creation of technology activities. For example, in this step of the model, teachers are more creative by using the ICT tools, and the students can create videos or interactive presentations explaining a topic in the class. Figure 7 shows the teachers' average is 3.47 (SD 1.0), and the students' average is 3.30 (1.16). No significant difference was observed between teachers and students ($p > 0.05$). In conclusion, they sometimes integrate technology using Redefinition. Figure 7 shows the clouds with similar dispersion, and the boxes also have a similar structure.

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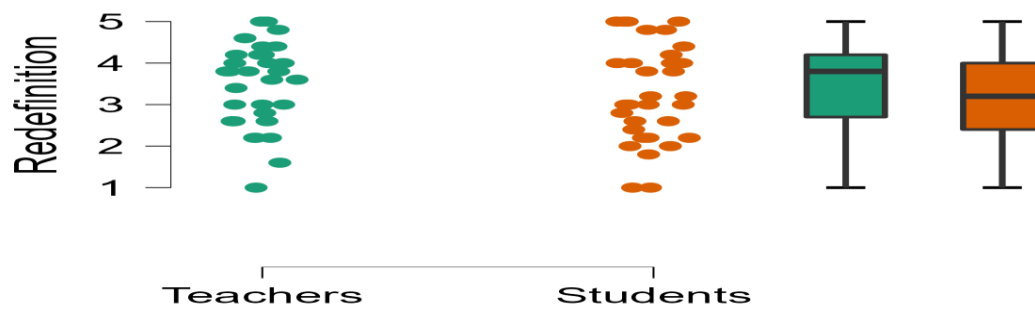


Figure 7. Raincloud diagram of the redefinition dimension in teachers and students.
Elaboration: Authors.

Since there are no significant differences between teachers and students, it is possible to compare the four steps or dimensions of the model at a general level. Figure 8 shows a comparison between the four dimensions of the model with an error diagram bar. This diagram helps to understand any differences among two groups of dimensions. Figure 7 indicates that the higher part tends towards the often practice. It is located the Substitution and Augmentation with 3.7 and 3.89 respectively.

Moreover, in the lowest part of the figure, it is observed that the modification and redefinition dimensions have 3.27 and 3.38 points, respectively. All of this indicates that Substitution and Augmentation are equals. However, if we compare one with Modification or Redefinition, the figure shows that they are not equals.

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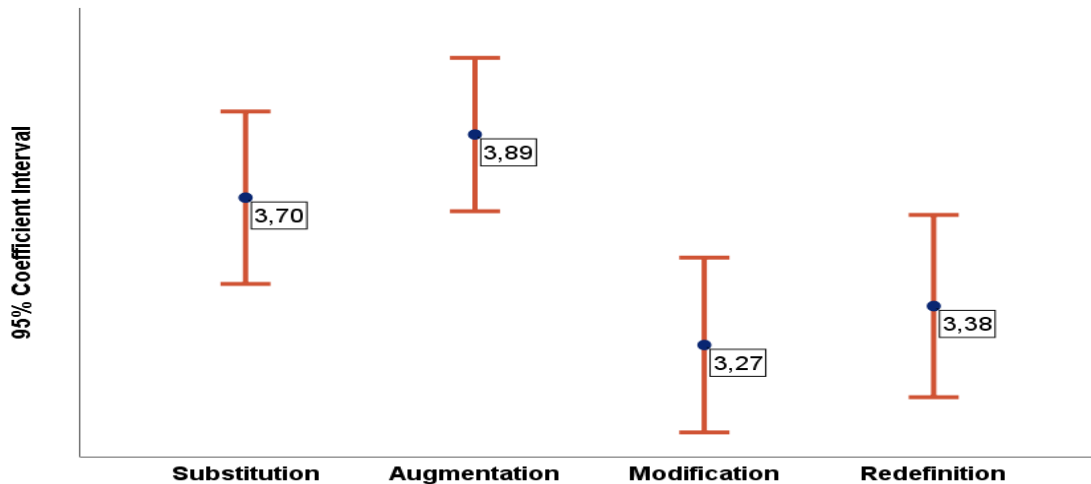


Figure 8. Error bars of the four dimensions in teachers and students.

Elaboration: Authors.

In contrast with the results of the studies of Howlett et al. (2020), Hashim (2018), Tunjera & Chigona (2020), and other authors previously mentioned before in the current study, it is impossible to make a comparison with the results of this study due to the different sample of the participants. As mentioned, the participants were from higher education and for ages between 18-30 years old in the case of students. On the other hand, the teachers' survey was focused on Ecuadorian University teachers. However, the authors mentioned that the SAMR model could help teachers and students create meaningful tasks to improve their learning-teaching process, facilitating technology integration in the class.

Technology integration into the classroom

Also, additional questions were formulated in the survey to help understand the use of technology in the English class. These questions were related to the technological tools teachers and students implement. So, the most common resource used by teachers is the chat (93.5%), closely followed by different platforms (83.9%). In contrast, students use the

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same options with less frequency, chats 55,9% and other platforms 61,8%, with a considerable distance found who apply forums and blogs in case of teachers and students with 64.5% and 41.2% respectively.

Less than half of teachers used social networks (45.2%) to teach English, and in the case of students, the frequency of use of this resource is only 17.6%. The 35.3% of students said that they apply email for their English classes.

On the other hand, a group of teachers (38.7%) manifested using other resources. Their answers were the same options given in the survey but with unknown software companies not mentioned on the question. However, some of them said gamification tools like Kahoot, Educaplay, Quizzes, Book Creator, Nearpod.

The results of the technological tools used by teachers and students are shown in table 1.

Table 1.
Technological tools in the English class.

Technological tools	Teachers		Students	
	n	%	n	%
Chats	29	93,5	19	55,9
Platforms	26	83,9	21	61,8
Forums y blogs	20	64,5	14	41,2
Social Networks	14	45,2	6	17,6
E-mail	9	29,0	12	35,3
Others	12	38,7	0	0,0

Elaboration: Authors.

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Teachers indicated that they have at least some knowledge on implementing technology in the class here are some testimonies on how they do it:

1. I used different applications available on the web, such as Liveworksheets, Quizzes, Word Wheel, and Kahoot. I apply them according to the students' skills I want to develop.
2. Using platforms like Google Classroom to organize activities and Kahoot to review the vocabulary or grammar taught in class. Of course, videos are also beneficial because students can watch them in and outside the classroom.

Students have used different ways to include technology in their language learning, so here is an opinion on how they use the technology in the class or outside it.

1. Computer, cellphone, internet, the book's platform, online chats, online dictionaries, etc.
2. Computers to watch videos, listen to the pronunciation, participate in forums, and use digital platforms like Cambridge.
3. We are in a technological era where technology is necessary to learn English.

According to Wahyuni et al. (2020), implementing technology into the class is crucial for teachers and students to develop an excellent learning-teaching environment. The current study results argue with the authors that both students and teachers use digital devices in different areas to practice what they have learned during the course. As for teachers, they assured that the use of digital tools helps them be more creative while teaching a lesson.

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Teachers' and students' perceptions on using technology in the classroom

Teachers and students have used some of the technological tools during their lives. For instance, teachers had stated that 29% of them had always used technology in their teaching before the pandemic. Followed by often (29%) and sometimes (22.6%). The minority (19.3%) have never used technology in the class before the pandemic. Moreover, more than half of them (87.1%) used it after the pandemic. Also, more than half of the teachers (65%) have said that technology is very important. Only 36% believed that technology is important and moderately important to use in the class.

On the other hand, 56% of students occasionally used technological tools to learn English before the pandemic. However, during the pandemic, 70% of students often or always use technological tools in their learning process. Also, most students (88.3%) consider technology important or very important to learn the language. Teachers believe that the integration of technology is crucial for their teaching process. Some of the teachers have given their perceptions or opinions about technology integration.

1. Without a doubt, technology integration helps improve the students' learning process. It allows students to create an atmosphere of interaction. They feel more motivated to leave the traditional methods like memorization.
2. Technology integration in the teaching-learning process benefits both teachers and students. For students, technology facilitates getting new knowledge in the case students. It allows teachers to prepare the classes better in a more interactive way.
3. Technology has allowed us to take more than the book is given us. Our students could access an infinity of information without the need to move from their houses. They can communicate with native English speakers, practice their speaking skills and learn new cultures.

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Students' perceptions of technology and its tools are almost the same; they indicated that the technological tools are essential to learning or improving their language. Some of their opinions are:

1. In my opinion, technology is a great help because it gives us opportunities to develop and enhance our comprehension in listening, reading, and writing in the English language.
2. I use Duolingo, and I can say that practice makes perfect, taking notes of the new word you learned. I consider that it benefits a lot because I can see that I could improve my pronunciation.

For instance, in both cases, students and teachers agree that technology integrations help them improve their language knowledge. For teachers, the integration can motivate and be more creative in teaching the language. Furthermore, students all agree that technology will help them improve their abilities in the language. According to Ondrashek (2019), technology allows teachers to deliver meaningful tasks for students. Also, teachers are more open-minded about using technology. The current study argues with Ondrashek (2019) that technology integration is helpful for any activity in the English classroom. However, it is crucial to mention that technology must not replace the teachers' methodology. The SAMR model is a tool for teachers and students to use the best they can.

PROPOSAL

After analyzing the study results, it is crucial to identify the proposal to help mainly teachers integrate technology in their classrooms using the SAMR model. In the study, it was mentioned that the SAMR model is similar to Bloom's Taxonomy pyramid. These similarities can also help teachers integrate technology according to the level of their students. However, this proposal is essential to mention how teachers might incorporate technology using only the SAMR model.

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Figure 9 indicates the SAMR that may be useful for teachers to apply in the class.

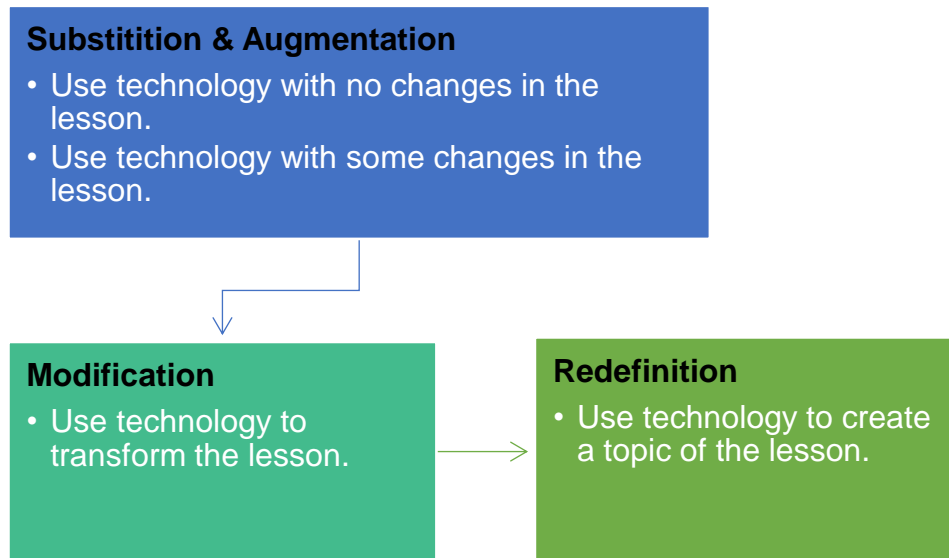


Figure 9 Proposal of the SAMR model to integrate technology in the class.
Elaboration: Authors.

After analyzing the study results, it is crucial to identify the proposal to help mainly teachers integrate technology in their classrooms using the SAMR model. In the study, it was mentioned that the SAMR model is similar to Bloom's Taxonomy pyramid. These similarities can also help teachers integrate technology according to the level of their students. However, this proposal is essential to mention how teachers might incorporate technology using only the SAMR model.

Figure 9 indicates the SAMR that may be useful for teachers to apply in the class.

In the SMAR model in figure 9, the first levels, Substitution and Augmentation are put together because these two levels are very similar. The only difference is that Substitution only replaces the traditional tools with digital ones. The following levels are Modification

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and Redefinition. It is essential to mention that this model is a helpful tool for teachers to integrate technology. However, it is up to them how they use it.

For a better understanding of the SAMR model, here is an example. We are applying the SAMR model with a writing task. This example may be used by teachers and could be applied differently depending on the teacher and the language skills of students.

Substitution: Teachers and students will use software for writing. For example, the teacher gives a topic for writing an essay. They send the document to the students via email or WhatsApp chat. Students and teachers only substitute the paper for an online document at this level. Students might use Microsoft Word or GoogleDocs to write the essay.

Augmentation: Students may use applications to write the essay; they might also use some apps to check for mistakes in their writing. For example, spelling and grammar for Microsoft Word. As for teachers, they could use this level to check their students' writing, also using software like Grammarly.com.

Modification: Teachers might use this step for technology integration by using a webpage called Padlet, where students may post their essays so their classmates could also give feedback on their writing and the teacher.

Redefinition: Teachers might tell students that they need to create a presentation or a video about the topic they wrote to present it to other students.

In both levels, Modification and Redefinition, teachers could create meaningful tasks applying the Higher-Order Skills from Bloom's Taxonomy.

The Augmentation and Substitution teachers might apply activities for lower-order skills. Of course, the activities depend on the level of students and the teacher's methodology.

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CONCLUSION

Technology integration has been used for many years, giving students and teachers opportunities to be creative in their learning and teaching process. In this study, teachers' and students' perceptions have been insightful to understand their opinions on implementing technology in an English class before and after the pandemic. They all agree that technology was not commonly used in class before the pandemic. However, they were forced to use different technological tools in their courses during the pandemic. After the results, teachers and students argue that using technological tools like Kahoot, Nearpod, Duolingo, and others, is beneficial for learning a language. It also has helped them create more interactive activities meaningful to learning the language.

Even though teachers had little knowledge of the SAMR model to integrate technology in their class, they have been using it indirectly. For instance, they could integrate technology based on the SAMR model by simply following their teaching experience and first considering using the SAMR model to use different technological tools to help students practice and improve their language skills.

The principal aim of the current study was to understand the perceptions of students and teachers about technology integration by using the SAMR model. Of course, this study cannot be generalized due to the small sample of participants.

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