

Exploring the role of technology through collaborative learning in Ecuadorian language education

Explorando el papel de la tecnología a través del aprendizaje colaborativo en la educación del idioma Ecuatoriano

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Resumen: Para parecerse al mundo real fuera del aula, cada vez más instituciones consideran esencial implementar la tecnología en sus prácticas de enseñanza, ya que los alumnos la aprovechan en su vida diaria y se espera que la utilicen en sus futuras carreras. Como consecuencia, el papel de la tecnología en la educación de la segunda lengua se ha convertido en el enfoque de varios estudios en los últimos años. Estos estudios han resultado en la búsqueda de múltiples beneficios tales como el aumento de la motivación de los alumnos, un enfoque de la comunicación auténtica y significativa, entre otros. Desafortunadamente, la mayoría de los estudios sobre el uso de la tecnología en la enseñanza de la segunda lengua se han realizado en países desarrollados (por ejemplo, Japón, Australia, EE. UU.), que se convierten en el escenario perfecto para realizar una investigación sólida debido a todos los elementos. Por lo tanto, se vuelve esencial determinar si estos modelos pueden implementarse en entornos latinoamericanos y cuán factibles serán debido a los recursos limitados de los que suelen depender las instituciones públicas. Este documento tiene como objetivo revisar las investigaciones anteriores sobre la implementación de la tecnología de las aulas de EFL. Debido al amplio alcance, el uso de la tecnología implica y la renuencia de instructores más tradicionales para incluirlo, esta investigación basada en la literatura se limitó a estudios que combinan una característica tecnológica con el aprendizaje colaborativo, otro enfoque de enseñanza sólido en la educación de la segunda lengua. Como resultado, se encontraron muchas ventajas en la posible replicación de estos modelos en el aula ecuatoriana de EFL. De manera similar, se desarrollaron algunos criterios para evaluar adecuadamente su viabilidad para obtener un resultado más preciso de la efectividad potencial de estos modelos en las aulas ecuatorianas de EFL. Las cuatro consideraciones de Gruba y Hinkelman (2012) en el desarrollo de enfoques combinados para el aprendizaje de idiomas se utilizaron como referencia para evaluar estudios previos de acuerdo con nuestras necesidades. Para concluir, se hicieron algunas recomendaciones para futuras investigaciones sobre el tema.

Palabras clave: enseñanza de la segunda lengua; configuración de EFL; tecnología; aprendizaje colaborativo

Abstract: In order to resemble the real world outside the classroom, more and more institutions find it essential to implement technology into their teaching practices as learners make great use of it in their daily lives and are expected to use it in their future careers. As a consequence, the role of

technology in second language education has become the focus of several studies in the last years. These studies have resulted in the finding of multiple benefits such as the increase of learners' motivation, an approach to authentic and meaningful communication, among others. Unfortunately, most of the studies on the use of technology in second language education have been performed in developed countries (e.g. Japan, Australia, USA), which become the perfect scenario to conduct a sound research due to all of the elements these settings count on. Therefore, it becomes essential to determine whether these models can be implemented in Latin American settings and how feasible these will be due to the limited resources which public institutions usually rely on. This paper aims to review past research on the implementation of technology of EFL classrooms. Due to the broad scope, the use of technology implies and reluctance of more traditional instructors to include it, this literature-based research was limited to studies combining a technological feature with collaborative learning, another strong teaching approach in second language education. As a result, many advantages were found to the potential replication of these models in the Ecuadorian EFL classroom. Similarly, some criteria were developed to properly assess their feasibility for a more accurate outcome of the potential effectiveness of these models in the Ecuadorian EFL classrooms. Gruba and Hinkelman's (2012) four considerations in the development of blended approaches to language learning were used as a reference to evaluate previous studies according to our needs. To conclude, some recommendations were made for future research on the topic.

Key words: second language education; EFL settings; technology; collaborative learning

Introduction

The current Ecuadorian government has included, among its multiple plans, a restructuring of the education over the country. Being aware of the important role English as a Foreign Language plays in professional development, a special emphasis has been placed on this subject, typically neglected since its inclusion in public education. In order to achieve this proposed reorganization, strategies include the renewal of national curricula, the elaboration of textbook series that comply with these curricula, the development of EFL teacher training programs, and the improvement and strengthening of teaching careers in higher-education institutions (Ministerio de Educación, 2012). In the last two decades, many researchers have paid great attention to the implementation of technology in the EFL classroom as a useful tool to approach a more realistic use of the target language, enhance teaching practices, and mainly attract and encourage new generations to learn a new language (Stanley, 2013). Nevertheless, scarce research has been conducted in Ecuador and other Latin American EFL contexts where studies have been limited to intercultural education, immigration, educational policies, Spanish speakers' pronunciation, among others. Evidently, second language methodology is a vast area which needs to be explored in these countries. Although technology has proved to be advantageous in terms of distance education and self-instruction, this study intends to explore the benefits of introducing it in the Ecuadorian EFL classrooms. A good way to be innovative, but without disregarding the traditional elements of a sound educational program, is the inclusion of technology through collaborative tasks. The prime reason for this matter is, as social constructivist theories suggest, that languages are mainly learned from the interaction with other people. With this, two strong approaches are combined and the broad study of technology in education might be limited to a particular focus and, therefore, seek to contribute to the transformation in second language education the government is looking forward to.

Research Question & Objectives

This study aims to conduct a systematic review of previous research on the application of technology and collaborative tasks in EFL contexts, as well as analyse the benefits of potential replication in the Ecuadorian classrooms. Therefore, the study intends to answer the research question: *Which models of technology through collaborative tasks may be successful in the Ecuadorian EFL Classrooms?* In order to guide the data collection in this review, the following sub-questions will also be addressed: *What are the benefits of introducing technology through collaborative tasks in the EFL Classroom? What aspects or areas does introducing technology through collaborative tasks improve?*

Delimitations

During the preliminary search, different models of collaborative learning and technology were found in first language education, job training, and ESL classrooms. Nevertheless, this study was limited to explore previous research on second language learning and instruction in EFL contexts. In terms of the participants in previous studies, all the audiences will be included for further analysis on whether these models may be applicable within the target population of this research: primary & secondary students. As mentioned above, similar studies have not been developed in Ecuador or any other Latin American country. Thus, European and Asian studies constitute the main body of the literature for no particular reason.

Literature Review

Collaborative Learning

Collaborative learning approach mainly derives from Piaget and Vygotsky's constructivist theories. According to Piaget's constructivist theory of cognitive development, "a child forms new conceptual structures as a result of interactions with his or her environment" (O'Donnell & Hmelo-Silver, 2013, p. 6). He claims that the individual normally seeks balance in the cognitive system. However, this balance can be disrupted when a structure is modified in some way due to the experiencing of new objects or events. Once the individual becomes aware of this conflict, they will make an effort to restore cognitive equilibrium on the basis of new information. Piaget's theory can be easily transferred to a second language class where, during any group activity, fellow students "may provide opportunities for others to experience cognitive disequilibrium or conflict" (p. 6). Through discussions within the group, learners may resume cognitive balance by "arriving at new understandings as they work together" (p.6).

Likewise, Vygotski strongly believed that language developed primarily from social interaction. Based on this, he described a *Zone of Proximal Development* in which a learner is not able to master a particular task on his or her own, but can do it with the help or guidance from a more capable individual (Lightbown & Spada, 2013). Vygotski's ideas could be reflected on the traditional teacher-student relationship in which the first scaffolds different activities to ensure learners develop cognitively and construct new knowledge properly. However, collaborative tasks can also enable some students to learn from their peers who dominate a topic more than others.

Nowadays, collaborative learning is contemplated as a way of getting rid of the stigma of traditional education. According to Brady (2006), besides being learning per se the result of “meaningful interaction and dialogue with other students “ (p. 3), some of the benefits of implementing collaborative learning into the language classrooms are that learners become aware and responsible for their own learning, and develop active participation. This totally complies with famous educational psychologist Jerome Bruner’s (1996) remark: “Learning should be participatory, proactive, communal, collaborative, and given over to the construction of meanings rather than receiving them” (p. 84).

For all these reasons, collaborative learning becomes an essential component in second language education and has thus been the central topic of many studies. For instance, Freeman (1992) describes and explains how the students in a French class worked together to create a shared understanding of the language.

Technology and Collaborative Learning

Undoubtedly, the world has witnessed an enormous growth in the use of technology in the last two decades. Since learners make great use of technological devices in everyday life, it becomes essential to implement them in the language classroom for both teaching and learning purposes. While some teachers are eager to this, there are some instructors, especially traditional teachers, who feel sceptical of the advantages technology offers.

Introducing technology into the language classroom allows learners to regard learning processes from a different perspective. Stanley (2013) argues that some of the benefits include accessing instant information and real communication, publishing learners’ work as a motivational strategy, and counting on a wide range of functions technological devices feature. The author presents several activities to be applied by both technological and non-technological teachers. Likewise, Golonka, Bowles, Frank, Richardson & Freynik (2014), made a general review of technology types and their effectiveness with no special focus on a learning aspect.

One paramount aspect of the utilisation of technology is how it perfectly enables the adhesion of collaborative learning, which results in the combination of two strong approaches in language education. Addair-Hauck, Willingham-McLain & Youngs (1999) assessed this issue in a college-level French course. Participants responded well to the implementation of technology into their classrooms and researchers were pleased with their performance and attitude towards the curriculum. Other benefits were the improvement and awareness of their writing and the increase of spontaneous collaboration among students outside the classroom.

In their research, Wailey and Bailey (2006) explored how a group of learners interacted and co-constructed understanding along with argumentation tasks. In this study, web pages “played an interventionist role by either promoting recognition of conflict, or by forcing justification or explicit discrimination between theories” (p. 316). On the other hand, they noticed that dyads did not benefit from their partners and that interacting in groups might make learning more difficult. They infer that collaborative learning might be successful in triads or virtual groups instead.

As Gruba and Hinkelman (2012) suggest, simply integrating technology will not lead to pedagogical improvements. Before making a decision on this matter, Purpose, Appropriateness, Multimodality and Sustainability must be considered.

EFL Research in Ecuador and Latin America

Regarding second language education, research in Ecuador is scarce and has been restricted to traditional issues of other Latin American countries. Due to the presence of different ethnicities, intercultural education has been the main issue of discussion in the continent. Furthermore, since most of these countries are developing nations, there has been special interest to develop educational policies and study rural education in second language.

Gomes de Matos & Wigdorski (1966) did very extensive research on foreign language teaching in Latin America. Back at that time, they reported insufficient number of trained foreign language teachers, lack of communication among language teachers in Latin America and the inability to obtain suitable material. Given the date of the research, these problems might have improved throughout the years. Nevertheless, there are still some issues that need to be explored in the area, as it happens in other EFL contexts in Europe and Asia.

Research Approach

Methodology

This study seeks to infer which previously tested models of technology through collaborative tasks in EFL contexts are likely to succeed in the Ecuadorian classrooms as a way to enhance learning outcomes and teaching practices. Since there is an evident “concern with applications – what works- and solutions to problems” (Patton, as cited in Creswell, 2014, p. 10), this study can be placed within a pragmatic paradigm. Complying with this worldview, this study “looks to many approaches for collecting and analyzing the data rather than subscribing to only one way” (Creswell, 2014, p. 11). The body of literature (qualitative data) will provide relevant information to fill the gap in the Ecuadorian context.

Method

In order to acquire a better understanding and conduct a deep analysis of the former practices of technology through collaborative tasks in different EFL contexts, this study will take the form of a systematic review. As Lambert (2012) explains, a systematic review “critically appraises a range of research evidence on a particular topic. From the analysis, it identifies key messages and continuing gaps in understanding” (p. 159). According to Torgerson, Hall & Light (2012), “the philosophy underpinning systematic review designs is based on the scientific principle of replication” (p. 217). Given this, the information to be retrieved will aid in classifying the advantages these models feature and lead to a better selection that properly addresses Ecuadorian educational needs in second language instruction, and, in this way, answer the research question.

Techniques

With regard to the data collection, a literature search was conducted using the following combinations of keywords: *collaborative learning*; *second language instruction*; *second language learning*; *technology*; *Ecuador*; *Latin America*; *foreign language*. This search included The University of Melbourne online catalogue, ERIC (an educational database accessible through the library website), and Google Scholar. Special attention was given to peer-reviewed articles from renowned journals in the field, such as *Language Learning & Technology*, *Modern Language Journal*, and *TESOL Quarterly*. Relevant books were included to define key terms, as well.

Analysis of the Data

In order to properly answer the research question and determine which models of technology through collaborative tasks are more likely to succeed, it is essential to analyse the potential benefits for doing it in the Ecuadorian EFL classrooms. After reviewing several studies, a better understanding of technology was grasped. By technology, educational experts and researchers refer to 1) the implementation of technological devices, such as computers, tablets, mobiles, webcams and ipods, 2) the use of internet as a means of communication and/or 3) the creation of a community platform or software. When any of these elements was present whether inside the classroom or as complement to their face-to-face lessons, authors described their projects as technologically-oriented. All authors researched agreed on the fact that the implementation of technology should not be a random process. This is the reason that they designed systematic plans to explore its benefits through the use of collaborative learning as a way to limit and guide their studies. Given this, the benefits of introducing technology through collaborative tasks are as follows:

- **Motivation:** Among the benefits technology brings to language education, the prime common aspect in all the studies was motivation. Every study has concluded, among other benefits, that learners feel eager to learn when some form of technology is present. Some of the reasons students feel motivated are that this kind of activities enables an anxiety-free environment, an aspect usually found in the typical classroom. They explain that students' perceptions are that the context becomes more flexible, they feel less pressure and hesitation, and that it actually becomes learner-centred (Lan, et al., 2007; Mesh, 2010; García-Sánchez & Rojas-Lizana, 2012). The authors agree that in order to develop this anxiety-free environment learners are willing to participate in, it is necessary to establish and clarify the rules of collaborative tasks for a better understanding. These rules might include the prohibition of colloquial languages and precise instructions in terms of respecting the inclusion of personal information when requested.
- **Language development:** In addition, language development was also recognised in the literature. After introducing technology through collaborative tasks, learners showed special improvement in reading and writing skills (Lan et al., 2007; Kessler & Bikowski, 2010; Mesh, 2010; Garcia-Sanchez & Rojas-Luzan, 2012; Yen et al., 2013), speaking (Lee, 2007; Pellerin, 2014) and vocabulary (Lui et al., 2011). Some of these studies even compared regular collaborative tasks to the ones that involved the use of technology. The results were similar and the learners that used technology displayed better performance. In addition, studies that involved delayed posttests showed that learners who worked with technology also developed better retention.

- **Feedback:** Moreover, participants in the studies were satisfied with the presence of real-time feedback they could count on. In regular classroom, some learners might receive delayed feedback and assistance from their teacher. The implementation of technology through collaborative tasks strongly encourages peer-correction and scaffolding. Learners become more conscious about others' weaknesses and strengths. Authors reported that this allowed lower-ability students to develop more confidence as they could rely on a more proficient fellow student who could assist them. Self-correction was also developed as participants made a huge effort to be as accurate as possible when realising that other people would attempt to interact with them.
- **Meaningfulness:** Finally, meaningful use of the language was the conclusion of some studies. Learners were able to find a real purpose among test-oriented lessons they were used to. Garcia-Sanchez & Rojas-Luzana (2012) also found out that this meaningful interaction could fill the cultural gap when developing this kind of activities between learners from different countries whose L1 and L2 were opposite, that means English speakers learning Spanish with Spanish speakers learning English. With this, participants also developed other values such as criticism and empathy.

With this information, it becomes clear why introducing technology through collaborative tasks is helpful in the Ecuadorian language classroom. Now that we know what to expect from this approach, it is easier to determine which of these previous studies may be successful when implemented in our classroom. For a more accurate outcome of the potential effectiveness of these models in the Ecuadorian EFL classrooms, Gruba and Hinkelman's (2012) four considerations in the development of blended approaches to language learning were used as a reference to evaluate previous studies according to our needs.

Consideration 1: Purpose

It refers to the aim the model has. It is essential to determine whether replicating similar studies in the Ecuadorian EFL classroom would enable teachers to work on different *Aspects* of the language since being proficient means being able to *read, write, listen* and *speak* accurately. It is a common belief that a sound English class should integrate all of these macro skills.

Consideration 2: Appropriateness

By appropriate, Gruba & Hinkelman (2012) mean that "pedagogies, processes and content proficiency levels are suitable to the context. Appropriate technologies fit the local conditions" (p. 9). It is important to consider *Class Management*. Due to the large amount of students the Ecuadorian EFL classroom counts on, a task which requires constant teacher monitoring or does not create enough group work opportunities will not be very effective. Similarly, if this task demands *Previous Knowledge / Training* from outsiders, it will not aid in the real purpose introducing technology through collaborative tasks has. Because of the time and money investment training may require, this is a criterion that needs careful attention. Perhaps a regular IT teacher from the staff can provide the training or the activity is easy to model and needs to explicit training and therefore it becomes appropriate for our context.

Consideration 3: Multimodality

This consideration refers to the ability of materials to be “combined in two or more ways to enhance variety” (p. 10). If the model is able to ensure this *Variety*, it might not be suitable for the Ecuadorian EFL classroom. Also, *Adaptability* needs to be considered and determine whether previous studies can be adapted to our context and curriculum to fit learners’ levels and interests.

Consideration 4: Sustainability

Finally, this consideration was broken down into two categories. *Resources*. Due to the low budget schools usually count on, it is unlikely for directors to invest a lot of money in the acquisition of many expensive devices. There are other demands that need to be addressed. Also, some public schools are located in dangerous neighbourhoods. Obtaining these kinds of devices might attract robbers. Finally, these must ensure long-term results so they become worth paying for. It is definitely an important criterion to analyse. Likewise, *Timing* is a very important factor for Ecuadorian educators. Planning, assessment, and the completion of an annual programme influence on their decision of implementing new techniques. If the model can properly fit 40-to-45-minute lessons or is suitable for each or both terms, then it is more likely to be successful in the Ecuadorian EFL classroom.

As it can be noted, although pedagogical improvement is the priority of this study, issues of resources and training are significant. Unfortunately, due to the low budgets these schools count on, money may be more influential when making decisions in our context.

Findings and Conclusions

After analyzing the data, it can be concluded that there is no ideal activity that fully satisfies our necessities in the Ecuadorian classrooms despite of their success in previous research. In our search for an approach that fully exploits all of the skills and language aspects, there is no one able to do that. Although some models involve great pedagogical strategies and ensure successful outcomes, the aspects of money and adaptability greatly influence in the overall decision. On the other hand, although some models are affordable and easy to implement, these partially develop language skills and do not grant the variety needed to fit learners’ levels and interests. Regardless, it is still possible to answer the research question and determine which models may succeed in our context.

1. Blogs. They are an easy and affordable way to introduce technology in the language classroom. Public schools count on at least one computing lab and it is very unlikely to find a person without a computer, a mobile phone and internet connection at home. This makes it the most feasible approach to introduce technology through collaborative tasks. Despite the fact that it does not develop listening and speaking skills, the topics to be discussed and errors encountered in the blog can perfectly be the beginning of a new lesson; exchange of opinion and discussion take place and allow students to listen and speak. Besides, videos, songs, interviews can be uploaded by the instructor. For instance, learners can listen to a song and discuss it meaning through written posts.
2. Mobile devices. Although some mobile programs or applications demand a lot of training and investment, they seem to be the most effective tool to introduce technology through

collaborative tasks in the Ecuadorian EFL classroom. In their study, Lan, Sung & Chang (2007) used tablets and a special system in which learners were able to improve their reading skills. Through this program, learners could interact among each other and obtain feedback from someone who was not necessarily in their home group. To a simpler extent, Pellerin (2014) had a group of learners use their cellphones, ipods or tablets to film and narrate stories. Although these types of tasks do not involve reading and writing, teachers can modify the activities to create new tasks. For instance, learners can write a caption under each picture they take to create a story. Learners can send pictures to the other groups so they could write their own story. It explores creativity and group work to a larger extent.

3. Social networks. Yen, Hou & Chang (2013) implemented Facebook and Skype into their lessons as a way to encourage discussion dealing with information gaps and unpredictability of communication; learners shared the responsibility to construct a meaningful exchange of ideas. These types of tasks feature the same challenges discussed above. Although it greatly develops language skills, it demands a high number of computers and headsets. The computing lab can be an option, but it will not completely help as these tasks suggest the use of one computer per person. The idea of taking advantage of popular webpages and programs such as Facebook and Skype needs to be explored. Teachers need to come up with different versions of the activity that retrieve similar outcomes.
4. Software. The idea of developing special learning software has been slightly mentioned above. Lin, Chan, Hsiao (2011) implemented a special system in which learners could work on vocabulary tasks as a virtual group. However, the design of software is a sensitive matter despite it is not quite sophisticated. The department of education can open contests so program developers could create software that presents the benefits the study does. IT students could do the same as a project for their bachelor's degree. The idea is worth considering since it strongly encourages learners to become responsible for their learning. All of this should follow the guide of a language teacher.

Contribution to Knowledge and Suggestions for Future Research

The results presented in this study definitely contribute to our knowledge as they show how other developed countries are ahead in terms of technology use in education. There is a big contrast between what is done in other EFL settings and what is done in the Ecuadorian EFL classrooms. With this, a first step can be taken and the department of education can become aware of the benefits this approach brings to learners. Teachers can take these models as a reference so they can develop their own strategies. Besides, this study might make people aware of the importance of educating technological teachers. New subjects entailing technological literacy can be included in teaching careers. Finally, this allows us to think of a possible relationship between IT and Education students. Since it is a requirement to develop a project before obtaining a Bachelor's degree, universities can think of having learners from these faculties work together and develop technological and pedagogical tools our education is lacking.

As this was a literature-based research, it is imperative to conduct some action research and collect data that can confirm if this type of tasks may succeed in our context as it has been suggested in this paper. In theory, they seem to work out if applied in our context. Although our

needs and situation were considered for the evaluation of each of these models, they must be tested in practice. Future research should consider the recommendations proposed and avoid replicating any of these tasks exactly as they were performed in other contexts.

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