Transforming the Learning of English through Recontextualisation: from the Notebook to the Computer Graphic Organiser[1]

Transformando el aprendizaje del inglés a través de la recontextualización: del cuaderno al organizador gráfico por computadora

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Abstract

This study explores the experiences of a group of students, from a disadvantaged background, with the use of Computer Graphic Organisers (CGOs) in their English as a Foreign Language (EFL) class. More specifically, the paper analyses students' recontextualisation of their English language learning process in performing reading comprehension activities. The participants were students from the Distrito de Aguablanca in Cali, enrolled in a Computer Systems Technician Program in a state funded institution. Action research was carried out for 12 weeks using the Substitution, Augmentation, Modification, and Redefinition Model (SAMR) to enable the integration of technology in the classroom. Data were collected through focus groups, semi-structured interviews, and observations. The results reveal that CGOs are effective for the learning process of students. The study concludes that the introduction of technology using CGOs requires a willingness on the part of the teacher to bring about technological change in the classroom and an openness to the effective recontextualisation of the students' learning process. Furthermore, it shows that recontextualisation and CGOs have a positive impact on the students learning and creativity which in turn improve their performance and attitudes towards English language learning.

Keywords: Computer graphic organisers; recontextualisation; EFL reading; social context; technology; SAMR; action research

Resumen

Este estudio explora la experiencia de un grupo de estudiantes, de estrato socioeconómico desfavorecido, usando Organizadores Gráficos por Computadora (OGC) en su clase de Inglés como Lenguaje Extranjera (ILE). Específicamente, el artículo analiza la recontextualización del proceso de aprendizaje de los estudiantes mediante el desarrollo de las actividades de comprensión lectora. Los participantes fueron estudiantes del Distrito de Aguablanca en Cali matriculados en un programa de Técnico en Sistemas en una institución estatal. La investigación activa se implementó durante 12 semanas utilizando el modelo de Sustitución, Aumento, Modificación, Redefinición (SAMR) para integrar la tecnología en el aula. Se recopilaron datos a través de grupos focales, entrevistas semi-estructuradas, y observaciones. Los resultados revelaron que los OGC son efectivos para el proceso de aprendizaje de los estudiantes. Se concluye que introducir tecnología usando OGC requiere de la voluntad del profesor para incorporar cambios tecnológicos en su salón de clase y la apertura a una recontextualización efectiva en el proceso de aprendizaje de los estudiantes. Además, la recontextualización del aprendizaje y el uso de OGC tienen un impacto positivo en los estudiantes mejorando el proceso de aprendizaje y la creatividad que a su vez mejora su actitud hacia el aprendizaje del idioma inglés.

Palabras clave: Organizadores gráficos por computadora; recontextualización; lectura de ILE; contexto social; tecnología; SAMR; investigación activa

Introduction

The objective of this research study is to explore and analyse the experiences of a group of Colombian students from a disadvantaged social background during the recontextualisation of their English Language learning process through the implementation of CGOs as a reading strategy. Hence, the study investigates the development of the learning process, the implementation of the strategy, and the perceptions of the students on the effectiveness of the use of CGOs.

The participants in this study are students enrolled in a Systems Technician Program for which they need to read texts in English related to the subject of study. These readings are informative and formative for their process of becoming systems technicians. The students, however, have little or no knowledge of English due to their educational background. They struggle to comprehend the readings since they lack vocabulary, a solid basis in English grammar, and necessary reading habits. What further complicates the situation is their lack of motivation or interest in learning English. Therefore, there is no effort or a positive attitude towards learning. As Byram et al. (2002) recommend, it is essential to introduce changes in teaching methods and the materials that are used in order to have a better process of teaching and learning. Similarly, González (2017) suggests that graphic organisers can be implemented as a new reading strategy because it can be used to significantly improve learners' reading comprehension at different levels of English. Hence, we decided to recontextualise

the students' learning process by integrating Graphic Organisers and technology to their English class, thus modifying how students were used to learning the language by going from the notebook to the Computer Graphic Organiser.

In this article, we first explore and critically analyse students' experiences concerning the integration of technology in the English language classroom. We then recommend the use of Computer Graphic Organisers (CGOs) as a strategy to improve the reading and writing skills of students, especially in less privileged social contexts. Finally, we suggest that the efficacy of this tool lies in part in its ability to recontextualise the students' learning process. The implementation of technology takes the English class from its usual context and resituates it into an unfamiliar context making the familiar strange and the strange familiar, refocusing and transferring knowledge of both English and Computer Systems through technology.

For the project, the authors made repeated visits to the Distrito de Aguablanca (Cali) over a period of 12 weeks to conduct the teaching, carry out observations, run the focus groups, and undertake semi-structured individual interviews with the students. Before starting their Technicians' program at a vocational and technical institution funded by the government, the participants in this study (whom we introduce below) attended public schools within the Distrito de Aguablanca, which is recognised as one of the most vulnerable and marginalized areas in the city of Cali (Hernández, 2009). In fact, according to Urrea and Murillo (1999), this area of the city has traditionally

been one of the more stigmatized and discriminated against, partly because of the predominantly Afro-Colombian ethnicity of its inhabitants. Discrimination is related not only to ethnicity but also to the socio-economic characteristics of those who live there. Additionally, according to NGO reports, "the first cause of mortality in this sector is violence and young people are the first victims (and also victimizers) of the conflict in the area [Distrito de Aguablanca]" (Lasso 2013, p. 40). Unfortunately, these socioeconomic conditions characterize much of daily life in this part of the city, in which poverty, social exclusion, and violence interact with each other. Public schools in the Colombian context have been described as offering low-quality English classes due to the lack of facilities and teachers' knowledge of and competence in the language (Correa & González, 2016). The ELT methodologies applied are mostly grammar-focused, based on memorizing word lists, verb conjugations, and translating sentences. Thus, following traditional methods and a teacher-centred approach.

Developing reading skills: some theoretical considerations

Social context, reading habits, and learning culture

It has long been apparent to researchers and practitioners that social context has a strong influence on reading habits and learning culture. For instance, Brown et al. (2016) indicated that reading achievement is strongly correlated to socioeconomic status. Moeover, Cunningham (2011) found that "poverty is the largest correlate of reading achievement" (p. 382). Walker-Dalhouse and Risko (2011) cited by Brown et al. (2016) "found that perhaps 75 per cent of children who are living in poverty score below their school grade level in reading" (p. 119), and that one reason for this is that reading is not valued in students' homes. In the local Colombian context Córdoba et al. (2015) found that the parents of children from a vulnerable sector in Cali showed passive literacy practice – which is to say, the parents, for the most part, delegated to the schools the responsibility of teaching reading habits to their children. Meanwhile, the family background, such as the parents' educational level and reading habits, significantly influences their children's reading habits and academic performance (Cerrillo, 2005; Moreno, 2002; Robledo & García, 2009).

In addition to family background, other influential factors have to be considered, such as the type of school they attend. As for school context, characteristics such as the physical infrastructure of the school, the number of students per classroom and – most importantly for the present study – the educational methodology used to transmit knowledge have been shown to have a close relationship with whether and how children learn to read, as well as with their academic performance more generally (Giraldo & Mera, 2000). Thus, the methodology chosen by the teacher defines the activities and methods implemented in class. The method in language learning is a teaching component that helps the student reach the targets of learning in the fastest and most reliable manner. However, the students in this research

study do not possess strong reading habits, which - as we have seen - can be associated with social context. Furthermore, their previous learning experiences have been through traditional methods such as grammar-translation activities. The students' reactions to classroom tasks differ according to how relevant and useful they find them. Teachers are therefore faced with the responsibility of exploiting the social realities of their students' classrooms, the lack of resources, and students' reactions. This responsibility requires supporting, encouraging, and engaging their students in their learning process as well as reinforcing good language learning strategies to optimize teaching and learning.

Graphic Organisers as a strategy for reading comprehension in EFL

For reading comprehension activities, Graphic Organisers are considered an efficient and useful strategy for EFL students (Gomez, 2017; Llumiquinga, 2012; Mcknight, 2010; Parker, 2007). Hence, a fair amount of work has been done on computer-assisted concept mapping as a learning strategy (Liu et al., 2010). Concept mapping includes textual devices such as semantic maps, webs, story maps, and semantic organisers, as well as CGOs. GOs are defined by Ellis and Howard (2005) as:

Visual devices that depict information in a variety of ways. Most commonly, they employ lines, circles, and boxes to form images, which depict four common ways information is typically organised: hierarchic, cause/effect, compare/contrast, and cyclic or linear sequences. These images serve as visual cues designed to facilitate communication and/or understanding of information by showing how essential information about a topic is organised. (p. 1)

In this study, the project team chose to use CGOs as a strategy because, being visual representations, research evidence (see next paragraph) indicates that they would help the students gather and sort information. This allowed them to see patterns and relationships between the information in their readings, given that we knew that they were experiencing difficulties in extracting this information from the written word alone. A substantial body of work has claimed that CGOs represent an effective strategy to develop and improve reading skills, being supposedly versatile, motivating, enjoyable, interesting, adaptable, and encouraging cooperative work (Barraza, 2014; Öztürk, 2012) though we should also note that Avila and Gómez (2012) consider them too complex in their application for some students. However, what particularly drew our attention to this resource was Merrifield's (2017) argument that graphic organisers can be used to improve reading comprehension in students from disadvantaged backgrounds, with little experience of or enthusiasm for reading in the normal way. We hoped that our Aguablanca students, lacking self-confidence due to their general literacy skills and level of English, might find that CGOs allowed them to simplify information, using short words or phrases and creating structured, easy-to-read graphic displays. By lowering or removing some of the language barriers

(such as complex grammatical structures), CGOs would enable learners to focus on the connections between the elements of information in a text, helping them to develop their organizational skills and stimulate their thinking skills, as well as developing confidence in working with language.

Computer Technology integration for the recontextualisation of the learning environment

Various researchers have encouraged the use of a computer environment in the classroom for supporting and encouraging higher-level literacy skills (Clements & Sarama, 2003; Glaubke, 2007; Trites, 1998). However, as a result of a lack of resources, technology is not commonly used for English classes in government institutions in Colombia, especially in deprived areas like the Distrito de Aguablanca. When it is used, it tends to be for doing 'language lab' activities on a particular platform. This suggests that students do not naturally or normally make an association between English classes on the one hand and technology on the other. Therefore, our decision to use CGOs in order to enhance students' reading skills allowed for and, in fact we might even say, required the recontextualisation of the learning environment. Here we are using the term recontextualisation in the sense of relocating or refocusing the selective appropriation and transfer of knowledge from one field to another (Bernstein, 1996). We, therefore, intended to see whether students can transfer their knowledge of information technology to their English class, and by the same process, transfer their (albeit limited)

knowledge of English to research and to writing about information technology. We aim to create more dynamic and interactive English classes through instructional technology and develop students' English reading skills through this medium. In the long run, we hope to help our participants to be better prepared for their professional futures as Computer Systems Technicians.

Research question

Can recontextualisation through CGO's transform the activity of learning English?

Methodology

To answer the above research question, the researchers conducted this study following a number of procedures to collect, analyse, and discuss the data.

Participants

The participants were 27 students, 15 men and 12 women, from the Distrito de Aguablanca in Cali, enrolled in a Computer System Technician Program at a vocational and technical institution funded by the Colombian government. This institution is the most accessible to low social strata context students, and the participants in this study attend the Aguablanca branch of the institution. Most of these students were adults whose ages ranged from 16 to 45 years old. These participants attended two classes per week, three hours per day for 12 weeks. English was one of their compulsory subjects,

and the English course included some readings in English related to their Systems Technician program, but not necessarily English for Specific Purposes (ESP). According to the Common European Framework, the equivalent of their course is an A1 level. The students were considered to have a low proficiency level in English, and they struggled to comprehend the readings or to use English as a foreign language.

Data collection and procedure

The study drew on a qualitative approach which consisted of three sets of data, as follows: (1) the computer graphic organisers based on the reading activities done in class, (2) the focus group and individual interviews discussions, (3) and class observations.

Based on the preliminary PhD findings of one of the members of the research group and the experiences of another group member who is a full-time EFL teacher at this institution (we refer to him henceforth as 'the teacher') we decided to undertake this project. In his day-to-day work, the teacher is faced not only with the vast majority of students coming to him with a low level of English and lacking vocabulary to comprehend the reading material, but also with having to start by transmitting to the students the tools to develop their reading per se. That is to say, their literacy levels are low in their L1(Spanish), just as they are in English (see our theoretical discussion above), and the teacher needs to approach reading in English not only from the perspective of teaching a language but also by introducing students to a habit of accumulation of cultural capital (Bourdieu, 1986) which

has never been passed on to them and which they consequently cannot/do not possess. To encourage students and involve them in reading for interest and its relevance to their studies and professional futures, the teacher began by promoting a small-scale and progressive reading habit where the length and difficulty of the text increased each time. The readings were chosen carefully regarding their topic relevance, length, and vocabulary.

While this new approach to reading had some limited success, it became clear that in itself, it would not radically alter students' reading performance or their attitude to reading. This is not surprising: as has often been noted, a culture of learning can be reflected in the expectations that students hold in terms of how they will learn or be taught EFL (Aronin & Spolsky, 2010; Tomlinson, 2005). Therefore, the teacher concluded that he needed in some way to re-contextualise the teaching and learning culture of EFL. As he has a personal interest in educational technology, and as the students were aspiring Systems Technicians and showed a demonstrable interest in and enthusiasm for computer technologies, he decided that enhancing students' reading skills could perhaps be done by integrating technology into the English classroom in the form of CGOs. This approach would, it was hoped, allow students to explore technology, to create, adapt and/or adopt new reading strategies, and to be creative. The approach would also, lead ideally to the kind of learning culture in which experiences are structured in a way that students have opportunities to investigate, explore and take risks in developing new ideas and insights (Dema &

Kramer Moeller, 2012). It was at this point that the research project team came together, and decided to test the efficacy of the approach through small-scale action research.

Action research and the SAMR model

We employed a classroom-based Action Research approach for the project (Figure 1) but also adopted some aspects of the SAMR (Figure 2) approach (Substitution, Augmentation, Modification, and Redefinition) from Puentedura (2010). This is a framework which aims to guide teachers in the process of integrating technology in their classrooms. Burns (2005) and Mertler (2009) stated that Action Research is an approach used to simultaneously take action and conduct research for transformative change which was achieved by combining these two (Figure 3).

Figure 1
Action Research
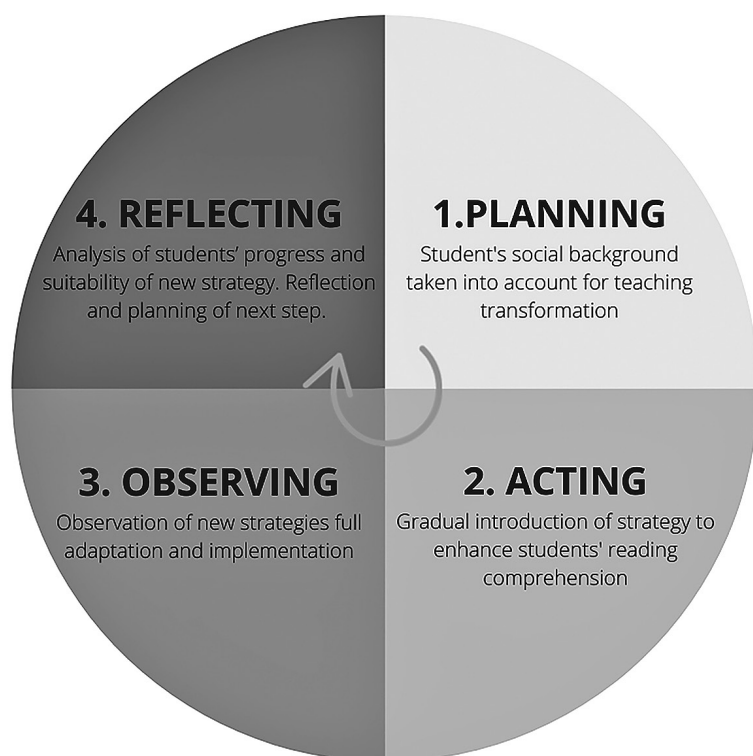
Note: Burns, A. (2005). Action research: an evolving paradigm? . Language Teaching, 38(2), 57–74. DOI: 10.1017/S0261444805002661

The SAMR model is rooted in the theory that classroom technology integration depends on the transformation or enhancement of traditional pedagogies through the substitution, augmentation, modification, or redefinition of educational tasks with new, supposedly more efficient technologies (Hockly, 2012). It consists of four levels, see Figure 2, beginning at a basic level of learning in the so-called substitution level through to one where learning is considered 'transformational' at the redefinition level. In this case study, we went from paper graphic organisers to computer graphic organisers, hence introducing technology for reading activities in the EFL classroom and incorporating so that the learning activity may result in a new type of interaction.
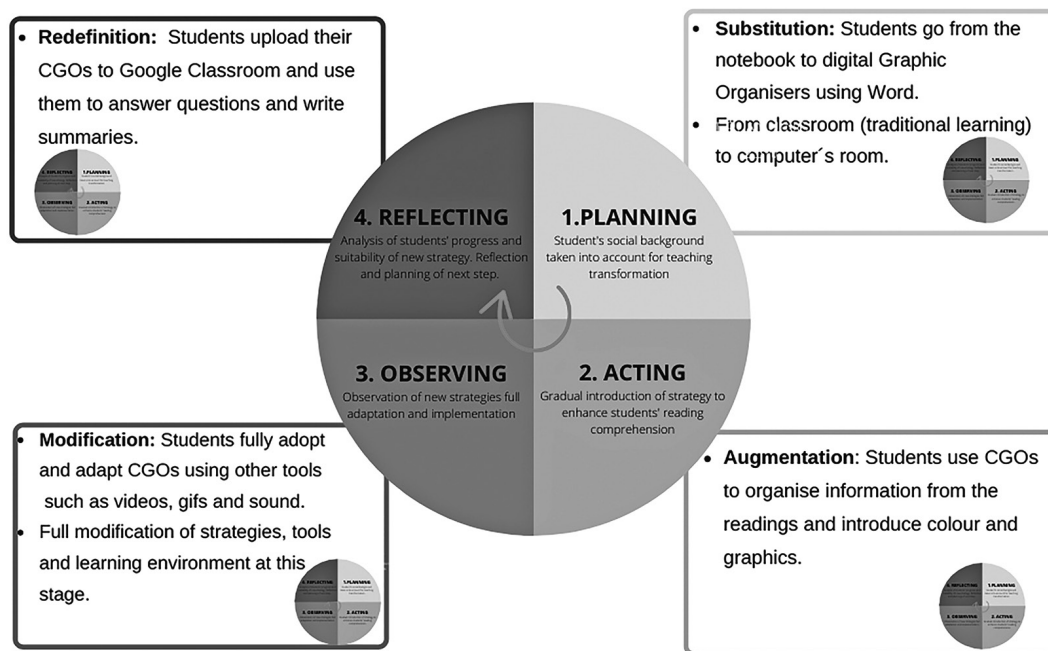
Figure 2
SAMR Model
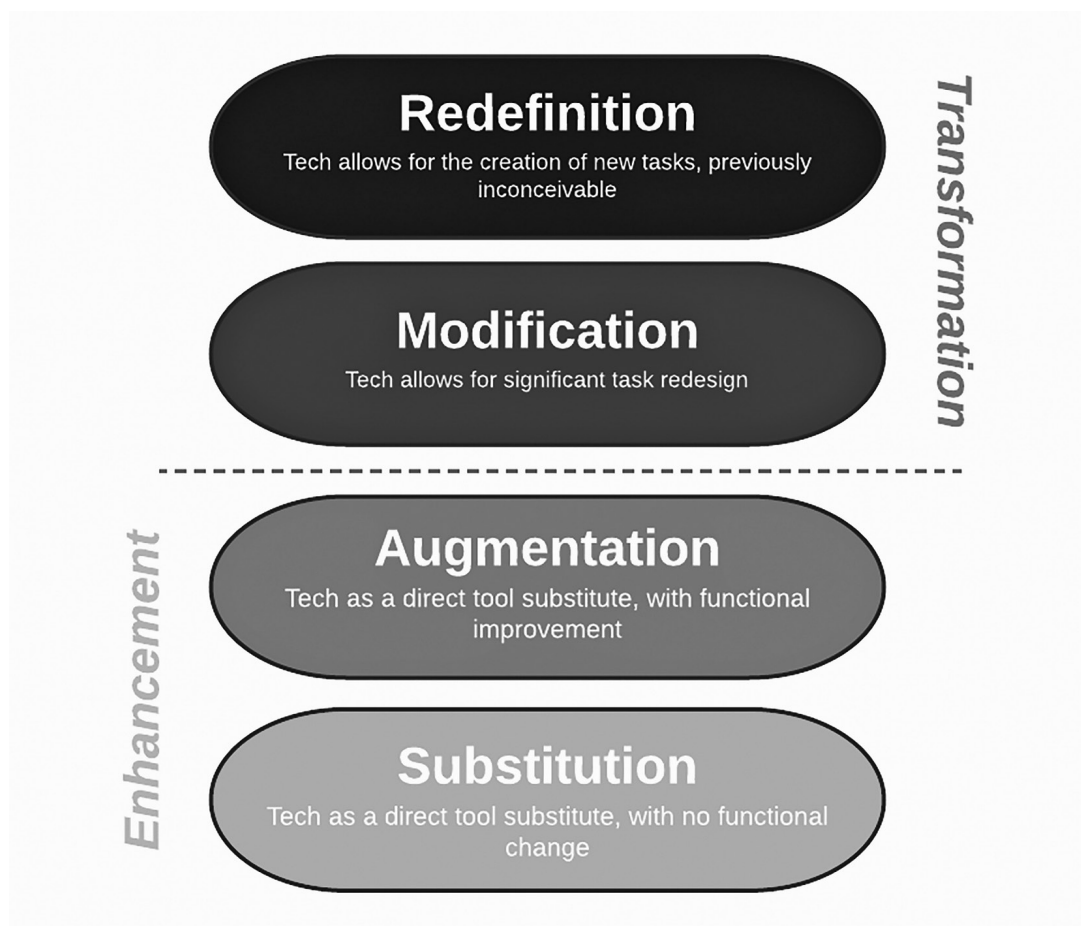
Note: Puentedura, R. (2010). Ruben R Puentedura's Weblog: Ongoing thoughts on education and technology. http://hippasus.com/resources/sweden2010/SAMR_TPCK_IntroToAdvancedPractice.pdf

The SAMR Model promotes digital literacy in part by helping the teacher to visualize clearly how to transform and to recontextualise the traditional learning environment and learning culture by implementing Information and Communication Technologies (ICTs). The integration of technology comprised the four levels from the SAMR model, which are substitution, augmentation, modification, and redefinition.

Figure 3
SAMR + Action Research

- **Redefinition:** Students upload their CGOs to Google Classroom and use them to answer questions and write summaries.

- **Substitution:** Students go from the notebook to digital Graphic Organisers using Word.
- From classroom (traditional learning) to computer´s room.

4. REFLECTING Analysis of students' progress and suitability of new strategy. Reflection and planning of next step.

1.PLANNING Student's social background taken into account for teaching transformation

3. OBSERVING Observation of new strategies full adaptation and implementation

2. ACTING Gradual introduction of strategy to enhance students' reading comprehension

- **Modification:** Students fully adopt and adapt CGOs using other tools such as videos, gifs and sound.
- Full modification of strategies, tools and learning environment at this stage.

- **Augmentation**: Students use CGOs to organise information from the readings and introduce colour and graphics.

Note: Authors' own adaptations of Figure 1 and Figure 2.

At the substitution level, during the first two weeks, students were asked to read short paragraphs and to make a Graphic Organiser on paper. The following week, students were shown platforms that allowed them to explore CGOs by introducing texts and engaging contents with visual aids on the computer. At the augmentation level, the teacher provided a short and easy reading passage for students to organise the information and create a CGO by using the different graphic design platforms introduced in the previous class. The transformation occurred at the modification level, where the English class was no longer in the classroom; now students were in the computer room having access to the readings on-line and creating CGOs, thus, redesigning the traditional learning environment and learning culture. Finally, during the redefinition level, we used the Google Classroom

application to upload five different beginner-level readings in the student exercise guide. The readings were carefully graded and sequenced in order to make sure that they increased gradually in length and difficulty. They were all similar in content and covered general information technology topics. Students had access to the readings on-line, and at the same time, they had access to the CGOs. After every reading, students uploaded their CGOs and immediately had access to five different types of questions based on the reading they had just done. The activity ended by having students write a paragraph summary of the text using their CGO information. This is because previous research showed that simply adopting GOs as practice has little impact in facilitating reading comprehension; drawing GOs would be of more use having a specific goal (Bean et al., 1986; Spiegel & Barufaldi, 1994). Students were also given homework to review and reinforce the work done in class.

Data Analysis

The focus group, individual interview, and class observation data were analysed using thematic analysis (Braun & Clarke, 2006). At the end of the cycle, we carried out three focus groups with eight students in each focus group and three semi-structured individual interviews selected at random. These allowed us to explore both students' experiences and perceptions on the use of technology for the transformation of their EFL learning culture/process and environment. Findings and discussion

This section will first present the findings of the study collected from the focus groups and semi-structured interviews and observations. Second, it will discuss the results considering the data collected and analysed to answer the research question. Third, it emphasises the importance and effectiveness of recontextualising the learning process of disadvantaged students by implementing CGOs to enhance students'creativity and improve their attitudes towards English learning.

Four themes were identified as the principal findings of this study; CGOs helped to organise ideas, save time, allow creativity, and recontextualise and enhance learning. We discuss them now in turn, incorporating some of the students' own reflections.

Organisation and comprehension of ideas:

Introducing CGOs to the English class helped students have a better comprehension of the texts read and specifically facilitated their understanding of the main idea of the texts. This was evidenced gradually and is in line with previous research (Alvermann, 1983; Ciascai, 2009; Guri-Rosenblit, 1989; Tang, 1992). We would argue that the use of a CGO successfully empowered the students by giving them the confidence to carry out the reading comprehension activities and the follow-up writing activity. There was understanding of the text because, as pointed out by the students, "The Graphic Organisers help me to clarify my ideas" *(PS1)*[2] Students experienced a sense of achievement and progress because, as stated by PS3, "we no longer need to use translators."

Furthermore, they have developed skills that can be applied outside their EFL classroom which empowered them in other contexts. For example, they "can even deliver small presentations [in all subjects] with that information" *(PS4)*. The CGOs become a useful new strategy to overcome weaknesses because "it is enriching to be able to understand…for me it is good… because I don't have the ability to memorise loads of things" *(PS12)*.

In the above excerpts, the participants state the services that CGOs offered in the teaching and learning process. They reflect on how CGO eased the challenges that they were facing in relation to the organisation of ideas, translation of texts, and preparation of oral presentations. This indicates that CGOs also helped them to develop their oral skills and encouraged independent learning by providing various benefits not only for reading and writing. Furthermore, the CGOs helped participants to overcome the problem of extracting the essence of the readings which was to separate important information from less important information. This showed that they were able to understand and organise their ideas. Moreover, when the topic is organised and clear, they develop their reading and writing skills, analytic skills, communication skills, and personal creative skills through graphic organiser means (Ellis, 2004). Therefore, with the CGOs, they did not need to resort to the previously experienced strategy of memorization of information based on repetition, which is associated with rote learning (Moore, 2000), and which prevents students from connecting theory and practice and, thus, preventing their understanding (Freire, 1970).

Before CGOs were introduced, the students had tended to respond to increasing length and complexity of texts with frustration and incomprehension. During the augmentation and redefinition levels, they began to respond by increasing the complexity of their own graphic organisers, leading to growing comprehension in their understanding of the texts and growing confidence in their own ability to manage English. This was pointed out by (*PS6*) who believed that "the good thing is that we start with the basics, we go step by step and we learn", and "It's a process, if we were given the texts we have now, we would have started crying" *(PS19)*. *(PS4)* also stated that "The texts are more complex now in the computer but because of the organisers we can manage them better. (*PS7)* also commented that "When I saw the two-page text I said oh no! This just got complicated, but then I was doing it using the computer graphics organisers and it was easier."

As can be seen from the testimonies above, the students started to notice the transformation of the activity of learning and CGOs facilitated their learning as they were able to organise and manage their texts better. For instance, it can be easily seen that *(PS13)* was relieved knowing that the CGO would help in organising the two-paged text, which he viewed as complex. The same is true for many other participants. This eases their frustration and shifts their focus on their learning, helping them to eventually improve their organisational and language capacity. The participants' awareness of their progress and the process they encountered becomes evident as stated by *PS19* above,

who compared how he would have reacted to the complexity of the texts before. This furthermore shows that students attained a successful reading strategy. They gradually became capable of understanding the texts, as the difficulty of the text was increased, challenging them but never overwhelming them. This approach fosters self-efficacy and encourages reading engagement (Linnenbrink & Pintrich, 2003). Furthermore, students who experience a gradual improvement in their skills during their learning process experience a sense of mastery, which helps to increase their self-efficacy for a task (Bandura, 1997). Furthermore, the application of technology can increase positive motivation and comprehension (Gajria et al., 2007).

Doing things faster

The use of computers did not only save time, but it also maximized students' performance and allowed more learning opportunities (Sabanci, 2014). Not completing the task or falling behind with the next activity discourages students (not just these participants, but any students) which in turn affects student mastery goal orientation (Jahedizadeh et al., 2016). However, by using the computers to design their graphic organisers, students were able to complete their tasks in class as expressed below by the students: "It saves us a lot of time" *(PS17),* and *(PS8)* commented that "it's just that I'm bad at drawing, so it took me a long time and I fell behind." *(PS20)* agreed that "it's better now that we're using the computer, we do things faster ...

it's easier now." Similarly, *(PS22)* believes this is "because on paper there are things that cannot be done ... how do I do it?... how can I represent words? ... but now I can search for information ... copy and paste [pictures] and the vocabulary is easier that way." Additionally, according to *(PS11), "*if you did it wrong, you had to tear the sheet or you fell behind."

In addition to improving efficiency, completing tasks in the time allowed gave students a feeling of satisfaction, creating a sense of achievement, which motivated them. Seemingly, by using computers, students were better motivated and worked faster. But it is also true that students did tasks which they could have never accomplished without technology, as clearly pointed out by the students themselves. Additionally, the use of computers had another benefit for the students, which they explained in the focus groups. When using notebooks, if they made a mistake, they not only had to start all over again, thus falling behind, but they ripped out a page and this meant their notebooks running out quicker and their having to buy a new one. It would hardly be noticed in a more middle-class environment, but given the socio-economic context of this study, this is something significant to the participants. Thus, in this sense, CGOs support students from disadvantaged backgrounds who have fewer resources (Merrifield, 2017) in terms of notebooks or access to technological tools. Furthermore, Anderson-Inman and Horney (1997) argued that technology helps students overcome obstacles imposed by paper-based reading.

Increasing students' creativity

The information on the students' CGOs evolved with time, beginning as very basic and poor in content and gradually becoming richer and more elaborated. Students included more concepts and started to create bigger CGOs. It is interesting to note that although the readings were not presented to the students as multimodal texts when creating their CGOs the students however integrated a set of modes such as colour, text, images, and sound, which worked as a simpler and easier way to understand the message the text intended to convey. This clearly indicates that the students became more strategic learners by using the CGOs. According to Bearne and Wolstencroft (2007) multimodality involves the complex interweaving of elements such as word, image, gesture and movement, and sound, including speech. These elements can be combined in different ways and presented through a range of media. Thus, in the end, we had all types of variations: coloured, with images, and even videos of their graphic organisers. Importantly, searching for information on how to add audio, images, gifs, and other media to their graphic organisers implied looking for information in English to be able to carry out the task. This showed that the participants were able to grasp the concept and use it in more complex ways. They no longer performed in a "technical" way or depended on teacher instructions so much. They gradually performed more deliberately and were able to use the CGOs for new settings, for oral presentations as already indicated above and to discover new things related to their field of interest.

Furthermore, they developed other skills by using applications, adding videos, images, and sound to their computer graphic organisers as expressed by some students: "I like them as they are more dynamic ... I can put margins…colours … so, it makes them look nicer so I can understand" *(PS9)* and *(PS14)* also commented on using CGOs:

> It's a very creative way and it's very comfortable because you do not feel like oh no, what a long text! And I have to read everything. I just get what I understand as my partner said and I complement a little bit, or I complement better like that... since the graphic organisers are very comfortable.

It was also evident through the teacher's observation that the participants progressively understood the readings better because of the content and how they were building their CGOs. Students were able to experiment, explore, freely choose, and successfully design their own graphic organisers, which resulted in much motivation and creativity on their part. Thus, the CGOs stimulated their thinking skills to create and share their ideas. This is in line with Parker's (2006) statement that Graphic Organisers can help students generate creative ideas.

From the written summaries of the students and the observations of the teacher the students had a positive attitude towards doing the summaries because the CGOs worked as an scaffolding for their summary writing, increasing their confidence in writing. The students did not only produce well-structured summaries, but more

accurate grammatical structures of the present tense and the correct use of pronouns were gradually produced. Thus students improved grammatical accuracy in writing, and increased their vocabulary revealing a positive progressive and continuing effect of the CGOs on their organisation of ideas and writing.

Recontextualisation enhanced learning

The recontextualisation of learning English through the implementation of CGOs provided the students with the opportunity to selectively appropriate and transfer knowledge from English to Computing and vice-versa, as well as providing the possibility to learn new skills.

Learning English and the use of technology are considered important skills to possess for our present and future society. Success in these two areas can be difficult for students of disadvantaged backgrounds. Thus, the recontextualisation of the learning culture is necessary and the implementation of strategies such as CGOs not only help students to improve their reading comprehension skills but to develop individual qualities and skills of initiative, drive, determination, independent learning, autonomy, self-reliance, risk-taking, decision making within a school context which can be applied beyond the classroom. On one hand, their knowledge of computers was very important because it enables them to use their prior knowledge to interact with the text. Additionally, participants had to activate the "right" knowledge (Coo-

per & Dunne, 2000; Chouliaraki, 1998) for deciding what prior background knowledge they had to activate when they applied the design and creation of the CGOs. On the other hand, English helped them to learn more about computers as stated by *(PS5):* "Now I remember more words in English and their meanings ... I recognize more the computer parts." Furthermore, by becoming aware of their learning process and progress, participants became aware not only of the criteria for the evaluation of the specific context and content of the work they were carrying out, but of how these strategies could be implemented beyond their EFL classroom. For example, most participants indicated they applied the use of CGOs to the reading and oral presentations of other subjects (taught in Spanish) in their Computer Technicians Program.

The process, seen through the prism of the SAMR model, guided the students to think differently by working in a technology-enabled classroom. This model allowed the teacher to follow the impact and the progress of the project in redefining both his teaching and the learning process of his students. It hence allowed for the re-modelling of the teaching and learning process, leading to a transformation stage, which included transforming and rebuilding students' learning experience in the English language classroom. Students felt their learning process was more meaningful. They liked the combination of technology, English and their area of interest; this made the classes more interesting and, crucially, made the use of English more relevant to them.

Conclusions and recommendations

The findings strongly suggest that the recontextualisation of learning through the implementation of technology and the use of Computer Graphic Organisers have a positive impact on the students' learning process and creativity. Our findings support previous findings showing that students find CGOs to be effective for their learning process because CGOs helped the students' reading comprehension in English. A combination of General English and their professional area of interest made the readings interesting and of relevance to the students. Furthermore, our findings show that choosing and creating their own Graphic Organisers using a computer allowed students to expand their creativity. Also using CGOs, students had sufficient time to complete their tasks, which in turn positively affected their attitude, confidence and motivation. The recontextualisation of the learning process allowed students to use their prior knowledge of computers to interact with English acquiring new knowledge related to their field of study through English and through their field of study, they learnt more English. CGOs also provided the opportunity for students who were not very confident in certain skills to be able to substitute them through the use of technology. This helped them to be more autonomous. Thus, students became actively involved in their own learning.

The outcomes of our study appear to lend themselves to several reasonably solid conclusions. First and most obviously, the study lends further support to previous studies (Griffin *et al.*, 2001; Jones et al.,

1988; Robinson *et al.*, 2006) reporting that graphic organisers are indeed effective for the learning process of students. Second, the study shows that using CGOs and recontextualizing the learning process of the students adds value to the students' learning. In concrete terms, it does this, by helping students to develop their reading comprehension skills, facilitating the completion of tasks, providing students with opportunities to participate more actively (in making their CGOs), encouraging them to become more autonomous and more creative by using their prior and knew knowledge of both English and their subject of study.

We argue that all of this, in turn, helps students to gain confidence. They learn a new way of organising their ideas while remaining focused on the main ideas. Furthermore, they learn to apply these strategies outside the English classroom, indicating learning was accomplished. This is in line with Kolb's (2017) persuasive argument that for technology to be beneficial, it should be used as a vital tool to help students meet their learning goals, rather than using it to falsely engage or 'drill and practice' students. We believe our study confirms this line of argument. It is the capacity of the technology to recontextualise the students' learning which gives it its value. It is crucial to remember that in order for technology integration to work properly, we as teachers need to keep several aspects in mind. For example, the selection of the technology should have a positive impact on the learning goals. The technology tool should engage students actively in their own learning process, and it should thereby help make students more active

and autonomous learners. Additionally, the technological tool should help students show a more in-depth understanding, both of their own work and their own learning experience. Last technology and the strategies implemented should facilitate learning for all students and should preferably allow them to apply the strategies beyond the English classroom.

The findings of this study helped our own understanding of the participants' experiences as well as supporting previous research on the influence and impact of implementing graphic organisers. The study also highlighted a relatively new conceptual dimension to the field through the notion of recontextualizing the learning process in the English classroom and studying how it contributes to the students' learning process. However, to achieve findings that are broadly generalizable enough to justify applying the CGO approach across all the vocational and technical institutions funded by the government, we would recommend that even larger-scale, mixed methods, and more comprehensive studies, perhaps at the regional or departmental level, be carried out. We would also recommend that future research in this field should include a follow-up study in order to find out what happens afterwards outside the EFL classroom concerning the implementation of the CGOs.

Notes

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2. Participant student 1. **«**

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