

Master's Dissertation/
Trabajo Fin de Máster

THE USE OF CHATGPT IN THE CLIL CLASSROOM

Student: Serrano Serra, Sonia

Supervisor: Dr. Nicolás José Fernández Martínez
Department: English Philology

July, 2023

INDEX

1. INTRODUCTION	3
2. LITERATURE REVIEW	4
2.1. Content Language Integrated Learning (CLIL)	4
<i>2.1.1. An overview of the CLIL approach</i>	<i>4</i>
<i>2.1.2. CLIL curriculum in Primary Education</i>	<i>6</i>
2.2. The use of AI in education	6
<i>2.2.1. Chatbots and Computer Assisted Language Learning (CALL)</i>	<i>8</i>
<i>2.2.2. The use of ChatGPT in education</i>	<i>13</i>
<i>2.2.2.1. Main functionalities for education</i>	<i>14</i>
<i>2.2.2.2. Prompt adequacy</i>	<i>16</i>
<i>2.2.3. ChatGPT in English as a Foreign Language (EFL) and CLIL contexts</i>	<i>17</i>
3. METHODS	19
3.1. CLIL subjects	19
3.2. Experimental stage: automatic design of activities	19
3.3. Experiments	20
<i>3.3.1. Experiment I: Music, Physical Education and Science</i>	<i>20</i>
<i>3.3.2. Experiment II: Other options of use</i>	<i>21</i>
<i>3.3.3. Experiment III: Attention to diversity</i>	<i>22</i>
4. RESULTS AND DISCUSSION	23
4.1. Output of prompts: a critical assessment	23
<i>4.1.1. Results of Experiment I</i>	<i>23</i>
<i>4.1.2. Results of Experiment II</i>	<i>30</i>
<i>4.1.3. Results of Experiment III</i>	<i>32</i>
4.2. Limitations and difficulties of use	34
5. CONCLUSIONS	36
6. BIBLIOGRAPHY	38

ABSTRACT

The emergence of ChatGPT in society and its widespread use are directly impacting the field of education. Specifically, EFL and CLIL can highly benefit from Artificial Intelligence and, in particular, from ChatGPT due to its ability to act as a linguistic tutor facilitating students' productions among other capabilities. This chatbot offers many other possibilities that have been analysed from a theoretical point of view. As an essential part of this dissertation, several experiments have been carried out to create activities that demonstrate how a prompt is understood and which output is produced as a result of this comprehension process. Various requirements in the experiments act as variables that include important aspects such as attention to diversity. Finally, a broad view of the potential of this tool is provided by considering its limitations of use to value its appropriateness in CLIL.

Keywords: CLIL, EFL, Artificial Intelligence, chatbots, ChatGPT, bilingual education.

RESUMEN

La aparición de ChatGPT en la sociedad y su generalizado uso están repercutiendo directamente en el ámbito educativo. Específicamente, EFL y CLIL pueden beneficiarse enormemente de la Inteligencia Artificial y, en concreto, de ChatGPT dada su capacidad para ejercer como un tutor lingüístico que facilita las producciones de los estudiantes entre otras capacidades. Este chatbot ofrece muchas otras posibilidades que han sido analizadas desde un punto de vista teórico. Como parte esencial de esta tesis, se han llevado a cabo varios experimentos para crear actividades que demuestren cómo un prompt es comprendido y qué output se produce como resultado de este proceso de comprensión. Diversos requisitos en los experimentos actúan como variables que incluyen aspectos importantes como la atención a la diversidad. Finalmente, se ofrece una visión amplia sobre el potencial de esta herramienta considerando sus limitaciones de uso para valorar su adecuación en AICLE.

Palabras clave: AICLE, ILE, Inteligencia Artificial, chatbots, ChatGPT, educación bilingüe.

1. INTRODUCTION

Artificial Intelligence (AI) has arguably ushered in a new era in education. In fact, education is in constant change thanks in large part to technology. Herold (2016) was very adamant in stating that technology is ubiquitous in the field of education. Education, in particular, is at a turning point due to technological progress. Consequently, learning how to use AI within the classroom will be crucial to ensure that teaching progresses at the same pace as society: “The emergence of big data, cloud computing, artificial neural networks, and machine learning has enabled engineers to create a machine that can simulate human intelligence” (Zhai et al, 2021: 1).

ChatGPT, a powerful chatbot developed by OpenAI, can ease the process of integrating AI for students and teachers because of its wide impact and capabilities: “ChatGPT is a versatile tool that can aid in open education by providing personalized support, direction, and feedback to autodidactic learners, thus increasing motivation and engagement” (Biswas, 2023: 2).

On these grounds, the educational system relies on technology as the tool that will guide students and teachers towards the achievement of diverse learning objectives, among which is the development of digital competence, since “there has been widespread excitement around the potential for technology to transform learning” (Escueta, Quan, Nickow & Oreopoulos, 2017: 1). The desire to transform learning has spread to all teaching areas. Concretely, foreign language teaching or a subject teaching under a CLIL approach can immensely benefit from the use of AI and especially from ChatGPT. One of the major risks in the use of this tool, as of any AI tool, is its wrong integration in the classroom, as stated by Zhai et al (2021), who claimed that:

“teachers’ attitudes towards AI have a significant influence on the effectiveness of using AI in education. Teachers may swing from total resistance to overreliance. The former could arise from inadequate, inappropriate, irrelevant, or outdated professional development. The latter may be due to teachers’ unrealistic expectations” (Zhai et al, 2021: 13).

Among these diverse reasons, it is quite common that teachers justify the use of technology by the high level of student engagement and participation (Kolb, 2017). However, educators should not only be guided by its benefits, but should also be aware of the risks, limits and challenges they face.

In line with the above, “challenges are inherent to transformative digital technologies” (Kasneci et al, 2023: 3). Because of that, the challenges of technology in education need to be assessed to consider whether it is feasible to use it in classrooms. This feasibility can be determined by ICT accessibility, since all students should be provided with access and school infrastructures should include technological devices, which requires a great deal of collaboration from policymakers.

Furthermore, data protection law and the promotion of critical and ethical use of technology should be considered as essential. A pedagogical shift from traditional teaching methods to student-centred methods, in which the learner is the protagonist of learning and is motivated to learn in an interactive way, is needed. As Puspitarini & Hanif (2019) underlined: “learning activities will run smoothly when students have the motivation to learn” (Puspitarini & Hanif, 2019: 53). Finally, teachers need to be aware that the use of technology can impair concentration and attention when it is used to plagiarise or avoid tasks that require extra cognitive efforts.

In general terms, technology can provide learners with the chance to access unlimited knowledge and resources that are highly valuable in an ever-evolving digital age. There is no doubt that in an increasingly digitised world, education must meet this social demand in order to educate competent and skilled citizens.

To this end, this dissertation on ChatGPT in education, and in particular in EFL and CLIL, begins with an exhaustive literature review to address the key points of the research at a theoretical level. Afterwards, an experimental stage with this tool is provided, which is followed by the results obtained from ChatGPT and their discussion. Finally, the conclusion is offered based on the limitations and potential of ChatGPT as an AI tool for educational purposes.

2. LITERATURE REVIEW

2.1. Content Language Integrated Learning (CLIL)

2.1.1. An overview of the CLIL approach

Marsh & Hood (2008) defined CLIL as “a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language” (Marsh & Hood, 2008: 43). Drawing back to its origins, this concept was introduced in 1996 by the European Platform for Dutch Education and UNICOM, the University of Jyväskylä in

Finland. It was not until the late 1990s when it was considered as a step forward in education and, in particular, in the teaching of a foreign language.

Despite using the foreign language as a vehicle for learning the content of certain subjects, this term differs from other bilingual approaches in its integration of four elements in the teaching-learning process: content, communication, cognition and culture. These are referred to as the 4C's framework proposed by Coyle (2007). Thus, both language and content teachers had to understand that it was not just a matter of deciding what content or linguistic aspect to teach, it required a broader conceptualisation covering cognitive demands and intercultural understanding (Coyle, 2015).

This context of learning in two languages focuses on choices made as part of educational policy, which involves instruction and learning in a language which is not the language of the community and where there is another language, that is the language of the community and the L1 of the pupils, which could be used as an easier means of explanation and interaction. (Kiely, 2011: 26)

With regard to Spain, English is taught as the second foreign language in schools because of cultural, economic and touristic factors. It goes without saying that English, as the most widely spoken language in the world, is an excellent opportunity to interact on an international level with people from different parts of the world. Such is its importance that most of the world's communications have been done in English (Rao, 2019). This need, and at the same time, privilege, must be transferred to the students in order to motivate them to learn it. For international language use, physical barriers are no longer limits thanks to technology. Technology has opened the way for interaction between people from different backgrounds who are likely to use English as a common language.

As language learning is no longer conceived as merely useful for translation, learners assume a major role as their learning will be actively constructed through interaction. Within CLIL, the enquiry and learning of non-linguistic content is greatly benefited by the myriad of very useful research and contributions from the field of linguistic. To be precise, students are able to learn content of subjects such as Science through the use of a digital tool like ChatGPT which can provide them with the opportunity to obtain information and maintain a conversation in the L2.

2.1.2. CLIL curriculum in Primary Education

The implementation of CLIL in Andalusia is based on official guidelines provided by national and regional education authorities. At national level, current legislation corresponds to Organic Law 3/2020 of December 29, which modifies Organic Law 2/2006 of May 3 on Education. As far as the Autonomous Community of Andalusia is concerned, the Order of 15 January 2021 develops the curriculum corresponding to the Primary Education stage. Specifically, Instruction 21/2022, of July 21, regulates the organisation and procedure of bilingual education in Andalusian schools for the academic year 2022/23.

On the basis of the aforementioned regulations, the Bilingual Education Programme promotes the implementation of CLIL in Primary Education in order to develop pupils' linguistic competences in English while teaching core subjects in that language. The selection of these subjects depends on the educational context of the school, but Science, Physical Education and Art are usually common. In terms of language proficiency levels, the Common European Framework of Reference for Languages (CEFR) is followed.

One of the most remarkable aspects of the bilingual programme is the participation of language assistants. They are native speakers of the target language who facilitate the learning process through real interaction with the students in the L2 in order to work on fundamental communicative aspects such as fluency, pronunciation and authentic language use as well as the curricular contents. The language assistant programme for the academic year 2022/2023 is being regulated by Instruction 20/2022 of July 21.

2.2. The use of AI in education

AI is concerned with the ability of machines to perform functions that require a level of intelligence typical of humans such as adapting to new situations, dealing with emerging situations, solving problems, devising plans, and answering questions (Coppin, 2004). Technology is having an irreversible impact on all areas. Specifically, AI is leading to a major transformation in the field of education.

A few years ago, Kurzweil (2006) offered us a clear vision of what the future would hold: “we will combine our brain power –the knowledge, skills, and personality quirks that make us human- without computer power in order to think, reason, communicate, and create in ways we can scarcely even contemplate today” (Kurzweil, 2006: 39). Seventeen years later, it

can be said that Kurzweil was right about this combination, which is proving to be quite revolutionary.

Throughout the years, the educational sphere has been exposed to various changes in the quest to improve its quality. Not many decades ago, education had to face a technological challenge whose potential was yet to be discovered. New possibilities of teaching through the use of technology meant an educational paradigm shift. As a matter of fact, Escueta et al (2017) were very categorical about the effect of technology on education: “technological innovation over the past two decades has indelibly altered today’s education landscape” (Escueta et al, 2017: 2).

This paradigm shift involved a reflection on the role of the learner as a receptor of knowledge. In this sense, the use of digital tools opened up the opportunity for learners to discover, investigate and apply their own knowledge. All this has been possible through the design and creation of technological resources aimed at teaching, enabling both the student and the teacher to learn by using a technological tool. Consequently, the technological advance propelled an educational advance in terms of prioritising that the student can participate in his or her own learning process as well as learn in a more playful, visual and motivating way. According to Stefanile (2020), “some innovative technologies have especially been designed to bring a new coherence to the integral intersection of the teaching and learning dimensions of education, especially when focused on student-centered teaching and learning” (Stefanile, 2020: 33).

Before a wide variety of technological resources were available, the creation of educative resources required a great deal of involvement on the part of teachers. Although textbooks were at their disposal, the accessibility of information and resources was very limited compared to the current situation, in which many resources and useful information are only a click away. Over time, the dissemination of educational resources reached more and more teachers through publishers.

Even though there was a great range of textbooks due to the distinctiveness of each publisher, textbooks were restricted to specific knowledge that was an indispensable guide to deal with the contents of the curriculum and to be in line with methodological considerations. Nowadays, publishers offer an extensive collection of resources for both teachers and students, as well as didactic manuals that pursue educational purposes such as encouraging the active participation of students and the development of critical thinking skills. There is no doubt that

this change in approach to one of the most widely used resources in the classroom as a source of information empowered the teacher to move from being an instructor to being a facilitator (Ayu & Inderawati, 2019).

As a complement to this wealth of resources, teachers can access authentic or adapted materials. Their accessibility has been greatly facilitated by technology, since many resources are available on virtual platforms such as Etwinning. Fortunately, technology has fostered collaboration between teachers to such an extent that teachers are now able to achieve fruitful learning by sharing knowledge, resources, and experiences from different educational contexts: “Collaboration between teachers constitutes an important predictor for the successful implementation of digital media in schools and teaching” (Drossel, Eickelmann & Schulz-Zander, 2017: 781). The reason lies in how collaboration can influence the integration of technology in teaching scenarios; for example, teachers can support each other in achieving mastery of a technological resource.

Despite the high expectations of the power of collaboration, teachers must realise that collaboration should not only exist at a virtual level between teachers of different schools, but also between teachers of the same institution. Teachers should be aware that the use of technology by itself does not ensure an improvement in teaching; however, collaboration among teachers in the use of digital media can improve the teaching quality (Cheung & Slavin, 2012).

It seemed that technology would not trigger much more change within these decades, but AI demonstrated its ability to perform several of the human functions, particularly those of teachers in such a context. In this sense, AI can create educational resources by following instructions. Undoubtedly, the potential of AI can lead to an improvement of CLIL practices if it is implemented appropriately. In other words, the integration of AI-based tools can significantly help teachers who teach in a foreign language or the language itself to optimise their teaching effectiveness and to better respond to the diverse needs of students (Rudolph, Tan & Tan, 2023).

2.2.1. Chatbots and Computer Assisted Language Learning (CALL)

A few decades ago, human beings seemed to be the primary source of learning. As a matter of fact, many tasks and responsibilities of daily life could not be handled without human intelligence until technological devices disproved the reality of that time. Technology encompasses much more than technological devices such as computers. Without being aware

of it, technology has become indispensable in our lives, in fact, we are surrounded by it: “we live not merely in a technological world, but in a world that from our earliest years we imagine and construct through tools and machines” (Nye, 2007: 9). Therefore, this reality extends to the classroom and the integration of technology is a priority.

During this process of technological integration, the emergence of chatbots has marked a turning point in teaching. The emergence of chatbots in society was destabilising and applauded at the same time because of the digital divide. Fear towards AI and technological devices rose in a large part of society due to the unfamiliarity with their potential and the consequences of their impact on the world.

Chatbots first appeared in the 1960s to prove whether users were able to detect whether they were interacting with humans (Shawar & Atwell, 2007). Progressively, chatbots were being created to respond to instructions, but their outputs were very artificial and did not look human. Research and computing advancements led to the creation of a tool whose linguistic production was natural and personalised called ChatGPT (Han et al, 2023).

Chatbots, as software programs enabled to simulate and participate in written conversations, and are characterised by their versatility and ability to be adapted to different contexts, such as the educational field. In light of the possibility of using this technological tool as an ally to encourage interaction and build learning from it, chatbots have been introduced in education to change the teaching-learning process by breaking away from traditional conventions towards an innovative approach: “digital technologies are a powerful instrument that can help improve education in various ways, such as making it easier for instructors to generate instructional materials and providing new methods for people to learn and collaborate” (Haleem, Javaid, Qadri & Suman, 2022: 277).

In terms of language learning, the use of chatbots enhances the learning of different skills. Research by Huang, Hew & Fryer (2022) concluded that “chatbots can promote students’ communication in target languages through three technological affordances: timeliness, personalization, and ease of use” (Huang et al, 2022: 253). Not only communication will be improved, but the learner can improve his or her reading, writing and listening skills depending on the objectives set for the use of AI.

From a pedagogical point of view, the potential of chatbots is underpinned by the way in which knowledge is acquired. The Social Constructivism Theory led by Vygotsky indicates that social interaction has great power in learning. Based on this theory, Clark (2018) guided us

towards the discovery of the relationship between chatbots and interaction in a way that these tools enrich learning through the development of social skills in realistic conversations between the user who uses it and the fictitious user who interacts by following recorded patterns. As this theory indicates, knowledge is built through collaboration that is engendered in social scenarios in which people actively communicate and participate.

Learners must desire to learn in order to do so and this is determined by their motivation. Undoubtedly, Ali, Shamsan, Hezam & Mohammed (2023) were right when they said that “motivation drives most human activities, including foreign language learning, and it is affected by several intrinsic and extrinsic factors” (Ali et al, 2023: 41). Chatbots promote effective interaction because of their high level of stimulation and engagement. The hallmark of chatbots is their capability to foster a more individualised learning experience (Cunningham-Nelson, Boles, Trouton & Margerison, 2019).

Concomitantly, the emotional factor is decisive for the interaction process. Actually, fear and shyness are great enemies that slow down the learning process when interacting. AI chatbots can have a positive influence on reducing inhibitions and fears associated with speaking in the L2 (Bao, 2019). Hence, chatbots can be an ally for learners to avoid situations in which fear invades them due to mistrust in their own abilities, among many other reasons.

Furthermore, one of the most relevant aspects of this tool is that no technological knowledge is required, so it is user-friendly and accessible to any user, which is highly beneficial for any learner. Undoubtedly, this ease of access is one of the most revolutionary aspects for demonstrating that it is possible to learn outside the classroom through appropriate resources. Richardson & Milovidov (2019) insisted on the idea that “the digital revolution has not so much broken down as erased physical barriers” (Richardson & Milovidov, 2019: 5).

Among all the areas that can gain great potential from the benefits of chatbots, it is worth highlighting the area of language learning. The use of technology as an enabling and helpful tool in language learning is known as Computer Assisted Language Learning (CALL). The main goal of CALL is to promote motivating learning opportunities in which interaction plays a key role. Motivating the learner is paramount for a receptive attitude towards learning. According to Rani, Kranthi & Anjaneyulu (2013), “learning is an active process of translating new knowledge, insight, and skills into behaviour” (Rani et al, 2013: 108). Hence, facing the use of technology with motivation would be of great help to ensure an effective and purposeful use of the tool for learning.

Undoubtedly, the simulation of realistic conversations together with the immediate feedback offered by chatbots allows learners to use the target language in an authentic way under a communicative approach. It is far from a utopian thought, as the research conducted by Klímová & Ibna Seraj (2023) on the use of chatbots demonstrated that “chatbots have allowed language learners to practice their language skills in real life” (Klímová & Ibna Seraj, 2023: 2).

Chatbots, such as ChatGPT, can generate scenarios for students to work together to solve problems and achieve goals, while fostering a sense of community through student-centred learning strategies (Rudolph et al, 2023). Consequently, active language practice conduces to collaborative learning. Collaboration among learners through the use of AI promotes both partnership and autonomy, as they help their peers in their search for common achievements. At the same time, the learner is able to critically detect their own mistakes.

Once the potential of chatbots in the classroom has been clarified, there are a number of useful tools and resources within CALL. AI chatbots can offer valuable support strategies, assistance, and resources to enhance the learning process. For an overview of the use of chatbots in education, a distinction can be made among the three most important areas of learning of each student: affective, social, and cognitive.

As previously mentioned, the affective factor is crucial since a student is a person who has feelings and emotions that can alter the teaching-learning process. Consequently, chatbots for dealing with mental well-being have been created so that the learner can obtain strategies to control and manage stress and anxiety caused by external factors (e.g., family problems) or internal factors (e.g., fear of producing an oral message in a foreign language). The most prominent emotional well-being chatbot is called 'Woebot'. The strategies offered by this chatbot to deal with stress and anxiety consist of promoting positive thoughts while avoiding negative ones, offering mindfulness exercises and relaxation techniques, encouraging users to carry out activities that promote wellbeing, offering information to work on anxiety and helping to propose realistic goals to prevent frustration, among other possibilities.

On the other hand, focusing our attention on the tools that are useful for learning a foreign language (L2), Amazon Alexa has been the most groundbreaking virtual assistant in Spain because of its ability to recognise speech and provide requested information. There are several usage options that improve speaking skills and promote interaction with the virtual assistant, oral production in L2, and listening skills. The Alexa virtual assistant can be very useful for working on pronunciation by asking for repetition of words or phrases, practising

dialogues by asking questions and listening to the answers, and getting inspiration to create stories by asking for a topic or the beginning of stories. This is because as a conversational bot, it tries to interact with users as a human being and respond to their requests (Tamrakar & Wani, 2021). Alexa also offers a wide variety of authentic materials such as riddles, songs, and podcasts that expose learners to real, natural English. In the same vein, Google developed a chatbot called Google Assistant that has similar functions to Alexa.

On a worldwide scale, Mitsuku has been awarded in the Loebner Prize Chatbots competition as the best chatbot for its coherence, intelligence when replying as well as its fluency and naturalness when maintaining conversations. In contrast, the most successful chatbot in China is Xiaoice, which was developed by Microsoft, and unlike the previous ones, can offer emotional support and empathetic responses. All these chatbots are equally valid for use in education, but the teacher must be familiar with the tool before using it with their students.

However, the teacher should also be aware of the possible consequences of their usage such as the need to balance their application with other educational methodologies to prevent dependency on the technology, to consider the ethical and legal requirements related to pupils' data privacy and to raise awareness of the possible inaccuracy of the information provided by the tool.

Alternatively, other tools such as ChatGPT can offer benefits for learners' cognitive development in a broader way and it is more widely used in Spain which makes it more accessible. Through this tool, learners can explore new areas of knowledge, critically reflect on the validity of the information obtained, improve language skills through interaction, and research about specific topics in an autonomous way. Its wide range of possibilities is what allows the analysis of this tool throughout this dissertation.

Finally, chatbots as cyberspace tools can be useful if they are used appropriately and if there are clear and achievable aims of use. It should not be forgotten that the use of any of these Information and Communication Technology (ICT) tools by students must be supervised by an adult, in this case by the teacher. In fact, educating them to access the net safely is the first step towards a critical and responsible use of any of the ICT tools that technological progress is offering us. Mhlanga (2023) maintained that:

Responsible and ethical use of artificial intelligence in education goes beyond ensuring technical accuracy; it involves considering the potential social and ethical implications

of its implementation, such as concerns about personal privacy and bias, as well as the role that AI will play in forming the educational landscape of the future. (Mhlanga, 2023: 2)

2.2.2. The use of ChatGPT in education

ChatGPT is an AI-powered conversational language model created by OpenAI that has the capability to contribute to the field of education. Undoubtedly, ChatGPT is a stake in the present and the future as it is revolutionising the teaching-learning process. ChatGPT can be defined as follows:

GPT, or Generative Pre-trained Transformer, is a type of deep learning model developed by OpenAI. It is trained on a large corpus of text data and is capable of generating coherent and contextually relevant text based on the given input. GPT models have found applications in natural language processing tasks, chatbots, content generation, and more, thanks to their ability to produce human-like text. (OpenAI, 2023)

Cai, Haslett, Duan, Wang & Pickering (2023) provided detailed information on how the tool produces new messages, claiming that “ChatGPT responds to questions and continues prompts by breaking text down into tokens and, based on the hundreds of billions of tokens it has been trained on, predicts which token will come next” (Cai et al, 2023: 17). The information provided is in line with its capacity due to the fact that the model has been pre-trained on terabytes of text data from different sources from which it learnt linguistic patterns. From a technological perspective, the tool relies on Natural Language Generation techniques to create coherent, human-like responses.

As one of its potentialities, its infinite accessibility to all the resources available on digital platforms facilitates the use of this tool in the educational sphere. Focusing on language teaching, its role could be even more transcendent because of its multilingual capability. This dissertation intends to analyse key features of this tool in its free version, as it is the most accessible in the classroom context.

Through the use of AI, students are expected to benefit academically, socially, and personally. Nonetheless, it is necessary to be aware of the fact that information can be misleading and to make the learner aware of the need to critically analyse the output. Patel, Lam & Liebreznz (2023) warned us about a major drawback of ChatGPT tool as one of the great recent discoveries: “ChatGPT’s output can be incorrect or biased, such as citing article references that do not exist or perpetuating sexist stereotypes. It could also respond to harmful

instructions, such as to generate malware” (Patel et al, 2023: 102). As a consequence, it is imperative to cultivate the learner's capacity to use the tool responsibly and the ability to identify information that can be considered ethically valid, so that it is far away from prejudices, stereotypes, and illegalities in order to be in line with the values promoted in the classroom.

2.2.2.1. Main functionalities for education

First of all, it is an interactive tool that allows the user to answer questions if it possesses the required information for that purpose. It should be noted that the information it provides has not been updated since September 2021, so its validity could be affected by any updates not registered in the tool. Furthermore, the user can also maintain a conversation with this AI tool. This conversation can be guided by the user by providing details about the context and raising questions. There is a wide variety of topics; indeed, it is not only useful to conduct general conversations about your routine or scientific aspects, but it can also offer recommendations according to the user's preferences (e.g., films, books...).

ChatGPT can also be used to contrast information and offer a broader vision to students in order to promote critical thinking and the drawing of personal conclusions based on contrasted information. These are achievable goals that are far from unrealistic, as the tool has demonstrated that it has the capability to do so and therefore, it should not negatively affect the quality of teaching/learning. Using this tool can save both time and energy of the teacher while not lowering the quality of the lesson planning (Koraishi, 2023).

Noteworthy among its capabilities is its multilingual capabilities for synchronous translation. Among other options, ChatGPT can create content to publish on social media such as Tiktok or Youtube. The pace of society is increasingly involving students in the use of social media in their daily lives and to be aware of this fact as teachers can be the key towards motivation. Bearing this idea in mind, teachers need to evaluate the potential of social media and critically consider the most appropriate approach to its use. Jan (2017) offered a clear vision of what teachers can do in this regard, by stating that “teachers have to expand teaching toolbox and try new applications example replacing textbooks with web resources, teaching with social media” (Jan, 2017: 52). Replacing the textbook may be a radical decision for students who are used to use it, but what is certain is that the proper use of social media as another tool can lead to learning success, as the level of engagement of students can be quite high when using a tool that many students probably master.

In terms of how ChatGPT can offer help, writing assistance is a clear example. This tool can enrich the vocabulary of a piece of writing by asking it to provide areas of improvement as well as offer corrections according to detected errors such as spelling mistakes. Moreover, it can offer suggestions for turning an informal text into a formal one and organise ideas in order to improve the structure of the text. Equally, it can guide towards the creation of the text itself by offering a possible introduction, body and conclusion.

All of these capabilities are useful from an educational point of view, as they can complement and reinforce learning. It is important to note that this tool can provide guidance in the form of scaffolding as well as design activities according to individual needs within a specific context. For instance, “students can benefit from using ChatGPT as a scaffolding tool for their initial draft and then refining the draft by correcting errors and adding references to the final versions of their written assignments” (Lo, 2023: 7). In the same way, the learner can ask for examples for clarification as well as for simple activities to reinforce learning. It means that a text or activity that is complex can be explained in a simple way, since the vocabulary used is easy or the information is written clearly.

A clear illustration of how this tool scaffolds is the provision of detailed and comprehensive explanations. Learners can even ask the tool to adapt tasks to a specific level by modifying specific aspects such as vocabulary or other issues related to explanations. By way of example, the student can ask ChatGPT to simplify this sentence to be more understandable: *preserving and conserving the environment requires our responsibility and commitment to adopt sustainable practices that minimise our ecological footprint and protect our planet's biodiversity* would become *helping the environment means we need to take care of nature. We should use water and energy wisely, not hurt plants and animals, and keep the Earth safe and diverse. Making good choices helps the environment stay healthy* if we ask *Can you use simpler vocabulary? I am 7 years old.*

The most outstanding capabilities include the adaptation of the content to specific characteristics, which includes suggestions for adapting the content according to different Special Educational Needs (SEN). Therefore, the teacher can request the adaptation of a task for a student with SEN as well as guidelines for acting appropriately according to these needs. For that purpose, ChatGPT simplifies the complexity, provides additional support as organisational strategies and suggests the inclusion of visual elements such as gestures or pictograms, among other possibilities.

In addition, the student can use this tool to find the best ways to solve a problem related to their emotional regulation; in this case, the student can obtain strategies for emotional self-management. This information can be requested by teachers to be used with students or the same student can ask how to approach the issue to find solutions such as creating a diary of emotions or reflection to perceive and understand the situation from another angle.

A large part of society is afraid of AI replacing the human factor, but “with AI, the need for real people will not disappear; it will only exacerbate the feeling of fear about unreal life” (Kushmar, Vornachev, Korobova & Kaida, 2022: 271). It is true that ChatGPT is very helpful, however, it must be noted that it cannot replace a teacher since there is no physical environment to guide learners in an interactive way and check how they are feeling or perceiving this process. Bearing this idea in mind, a teacher could use this tool to get instructions and guide questions unidirectionally if he/she intends to design or create activities. In this regard, Kasneci et al (2023) clarified the reasons why teachers cannot be replaced by language models:

Using large language models can provide accurate and relevant information, but they cannot replace the creativity, critical thinking, and problem-solving skills that are developed through human instruction. It is therefore important for teachers to use these models as a supplement to their instruction, rather than a replacement (Kasneci et al, 2023: 6).

2.2.2.2. Prompt adequacy

Any user must give clear and specific instructions for the tool to produce content effectively, as “by providing clear and well-structured prompts, users can help steer the model in the right direction and mitigate potential biases or errors” (Santu & Feng, 2023: 2). Hence, a teacher as an expert in the field must find the right instructions to ensure that ChatGPT's response is of high quality. Focusing on this aim, instructions should be based on providing a specific and understandable message, expressing simple and concise instructions without irrelevant information, providing details of the context of the task, and breaking down the instructions into steps or actions.

As a result, the desired outcomes can be achieved if the prompt is appropriate and provides the needed information to enable this tool to create a message or activity in line with what is required. Nevertheless, research by Zhong, Ding, Liu, Du & Tao (2023) concluded that "ChatGPT can achieve significant improvements in performance" (Zhong et al, 2023: 9) through advanced prompting strategies. In this case, the prompt should include essential

elements such as the topic, learner characteristics or learning objectives so that the production fits as closely as possible to the educational context.

The role of the teacher is not just about creating or refining the prompt, but also about detecting whether the result is as requested through a thorough review. That means that the teacher has a dual role as an error detector and as an adaptor of the output if necessary. For that purpose, it should not be forgotten that the teacher's experience and judgement will be decisive in using this tool, which is why they should not promote the use of this tool as an easy and quick way to obtain answers or as a substitute for critical reasoning, enquiry, and analysis of information.

2.2.3. ChatGPT in English as a Foreign Language (EFL) and CLIL contexts

Other educative tasks for CLIL and EFL focus on creating games, translating texts, composing songs, and summarising texts. Regarding summarising texts, texts can be logically and coherently structured; in fact, ChatGPT can provide the exact quantity of sentences or paragraphs and include specified key words as requested in the prompt. Furthermore, there is an option to adapt texts to a specific level of English, simplifying the grammar and vocabulary.

The creative realm has its place in this tool, as the tool itself can promote creativity through simple activities or inspirational texts with a creational focus. Additionally, students have the opportunity to turn a text into a poem through this tool, which can be a starting point to introduce the learner to poetry as one of the main artistic forms of expression that caters for an emotional and aesthetic response. As Cullinan, Scala & Schroder (1995) pointed out: “poetry is especially appropriate for language learning because it contains language used in its most beautiful forms” (Cullinan et al, 1995: 3).

Reading is an act of interpreting information that involves understanding the message of the text. “In order to understand a text, a reader must be able to identify words, know the meaning of most of the words and be able to combine units of meaning into a coherent message” (Fahmi, Friatin & Irianti, 2020: 80). That is why reading can be complex for many students as it involves a variety of cognitive factors such as the ability to sustain attention and concentration. Likewise, understanding beyond the explicit information involves drawing conclusions, requiring the learner to think critically and to give reasons in a logical manner.

In this respect, ChatGPT can facilitate this process by proposing questions to be answered after a specific reading. For this purpose, it is necessary to include the text and request

a number of questions, including guidelines that adapt these questions to the characteristics of the students. This adaptation could be considered as a facilitation process that benefits the comprehension of the text by decoding its words and dividing the text into simpler parts.

On the other hand, introducing Real English in learning is fundamental for the learner to use a natural language similar to that used in everyday life. Pérez Cañado (2009) defined the concept of Real English as “single words and, especially, multi-word items which are currently employed in conversational English by native speakers of the language” (Pérez Cañado, 2009: 4). Thus, they are updated expressions in colloquial use and are usually familiar and employed by native speakers. To this end, ChatGPT can choose a tongue twister from external sources or create one adapted to the lesson and its objectives. In addition, ChatGPT is a practical tool for working on geographical aspects. For example, it has the ability to plan a trip including essential areas to visit because of the historical events that have occurred there or because of their natural landscapes, among other options.

Concerning the potential of the tool, different uses can be distinguished. On the one hand, this tool can be very useful for working on written production and reading comprehension skills. There is no doubt that developing writing skills is one of the most complex aspects of teaching a foreign language because of the difficulty of motivating the learner. It is not an attractive activity and different skills have to be combined in order to produce a message.

This can be a challenge, especially for learners who are just beginning to learn English or have limited language exposure. EFL writing instruction also requires detailed feedback and support from teachers to help students improve their writing skills. This can be time-consuming and labour-intensive, especially in larger classes or with diverse learners. EFL writing can be challenging and often abstract for students to learn, and it cannot be easy to engage and motivate learners in this area. (Baskara, 2023: 44)

In this sense, ChatGPT can serve as a tool to motivate students. In addition, this tool can help us to improve writing techniques in those students who have difficulties and to reinforce the development of these skills in students who excel in the aforementioned skills through interaction. Introducing a technological tool in the teaching-learning process can be a source of extra motivation for learners. Research by Han et al (2023) provided significant findings showing that ChatGPT can benefit writing skills by stating that “our results indicated that most students reported positive experiences with ChatGPT for general, academic, and essay-writing purposes” (Han et al, 2023: 5).

All in all, ChatGPT as a language tutor provides clear explanations of grammatical aspects and vocabulary, corrects errors as an error detector and promotes the improvement of reading comprehension skills. As a material creator, it can offer a wide variety of resources adapted to the prompt provided by the user. In addition, it acts as a personal assistant by providing support and assistance in organising tasks, searching for information, writing assignments and offering guidance.

3. METHODS

3.1. CLIL subjects

With a view to analysing the appropriateness of the outputs obtained from ChatGPT, the tool is instructed to create different activities to be used in the same context, but in different subjects within the CLIL approach: Music, Physical Education and Science. The reason underlying this choice is the fact that these three subjects tend to be common in CLIL.

3.2. Experimental stage: automatic design of activities

Different experiments have been carried out with ChatGPT to illustrate its educational uses in CLIL contexts, for example, by following instructions to produce a poem or an activity. Hence, a clear and concise prompt is provided with some variables that prove the effectiveness of its modifications according to the specific contexts. It is important to remember that CLIL aims to work on content through L2 as a vehicle of knowledge.

Before embarking on the experimental stage, it is vital to emphasise that the main objective of activities revolves around promoting students' critical thinking. This means that students must be actively involved in drawing conclusions. Lastly, creativity is an important component in education and therefore pupils are asked to produce something in a creative way according to their level of competence in one of the activities.

In accordance with the instructions provided to the tool, the activities created by ChatGPT were designed for pupils of year 4 of Primary Education. This year has been chosen as they are at the halfway point of the Primary Education stage. The prompt engineering process involved a round of tests to obtain the most appropriate prompts for the output desired. The reason for this lies in the fact that the best way to get familiar with the tool is to check how it interprets certain terms and the modifications it applies to new variables introduced in the prompt to obtain the output desired. That is why requirements were indicated in the prompt.

Regarding the creation of the prompts, there are three types of prompts that were used and then assessed. A very basic criterion has been followed to assess what the tool can offer (i) with the minimum requirements, (ii) with an additional requirement involving the creation of the learner to develop Higher Order Thinking Skills (HOTS), and (iii) with even more requirements specifying that a particular linguistic skill needs to be worked on. Hence, in the first case, no detailed information is provided to ChatGPT to assess what it offers under the minimum instructions. Furthermore, within this criterion, HOTS are considered as essential for developing critical thinking skills because it goes beyond the basic level of knowledge. Bloom's Taxonomy (1956) differentiates between the different cognitive processes starting from Lower Order Thinking Skills (LOTS), from remembering, to HOTS, in which the last level is creation.

Subsequently, adaptation measures for learners with SEN are requested, specifically Prompt (5) and Prompt (6), to illustrate the change of approach made by the tool. As a way of finding the proper prompt, the instructions have been gradually manipulated to be more precise, by retaining only the essential information through simple commands (topic, subject and age).

Consequently, the expected results must be adjusted to the subject matter, the age of the students and the requirements indicated in each activity. As far as the methodological perspective is concerned, a student-centred approach is promoted in which the learner is the protagonist of the learning process. He/she must actively participate through activities with a duration determined by the tool. The absence of a time constraint allows us to see for how long the tool considers that requirements can be met, such as the development of critical thinking.

3.3. Experiments

3.3.1. Experiment I: Music, Physical Education and Science

Prompt (1) was as follows:

(1) Create an activity for the Music subject about flamenco dance for a group of Year 4. Students must actively participate and develop critical thinking skills.

Requirements: to encourage active participation and develop critical thinking skills.

Prompt (2) was as follows:

(2) Create a simple activity for the Physical Education subject about popular games for a group of Year 4. Students must actively participate, develop critical thinking skills and produce something creative.

Requirements: to encourage active participation, develop critical thinking skills and foster the production of something creative. Low difficulty indicated through the term "simple".

Prompt (3) was the following:

(3) Create a short activity (maximum 20 minutes) for Science subject about ecosystems for a group of Year 4. Students must actively participate, develop critical thinking skills and work on oral skills.

Requirements: to encourage active participation, develop critical thinking skills and work on oral skills. Limited extension indicated through the term "short". One cooperative technique must be included.

3.3.2. Experiment II: Other options of use

There are other possibilities of use such as adapting texts for writing/reading tasks, detecting mistakes in students' writings and improving their quality, and even creating ludic situations by participating in games to play with the user. The above is highly reinforced by the tool's ability to act as a personal tutor to help any user; in this case, both students and teachers can rely on ChatGPT to find tips, study strategies and, in short, to get guidance about different topics. Considering its diverse possibilities, there are other options of use that are appropriate for the classroom, such as the creation of poems, tongue twisters or a descriptive text according to the characteristics of a digital platform such as Youtube:

Prompt (4) was intended to be used in year 4 in Science class to convert explanations about the water cycle into a simple poem:

(4) Converts the previous text about the water cycle into a simple poem for year 4 pupils for the Science subject:

Text: "Water is constantly on the move in a never-ending journey called the water cycle. It starts when the sun heats up water in rivers, lakes, and oceans, causing it to turn into vapor or steam. This process is called evaporation. The vapor rises up into the sky and forms clouds. When the clouds get heavy, tiny water droplets join together and fall to the ground as rain, snow, or hail. This is called precipitation. The water then soaks into the soil or collects in rivers, lakes, and oceans, ready to be heated by the sun and begin the cycle all over again."

On the basis of the theoretical arguments provided in the literature review on the importance of using Real English in lessons, the following tongue twister has been created with ChatGPT to be used in Science when working on animals and their habitats:

Prompt (5) was the following:

(5) Create a simple tongue twister for year 4 students to work on animals and their habitats in Science.

Afterwards, ChatGPT is asked to create a text on a specific topic such as 'healthy eating', maintaining the format and hashtags commonly used on Youtube. Through this description, students of year 4 should invite their classmates to watch the video uploaded on this platform on the mentioned topic:

Prompt (6) was as follows:

(6) Create a description of the video your group has uploaded on Youtube about healthy eating. Invite your classmates to watch it. Year 4 of Primary Education.

3.3.3. Experiment III: Attention to diversity

In the light of the importance of catering for diversity, two activities have been designed to derive measures of adaptation for learners with SEN. The creation criteria used for Prompt (1), Prompt (2), Prompt (3) and Prompt (4) are kept here, although another variable is introduced in Prompt (5) and Prompt (6) referring to the characteristics of the learner. The instructions mentioned in the prompts above do not specify any adaptations or scaffolding to check whether the tool automatically includes this aspect.

With the aim of verifying whether the tool's approach is appropriate and that it proposes guidelines based on pedagogical criteria, it was requested to adapt an activity for two specific situations that are usually found in any school and whose complexity of action varies depending on the teacher's experience and knowledge: one student with visual difficulties and another one with Asperger's syndrome. In other words, ChatGPT is asked to adapt the same activity to students with different specific characteristics. For this purpose, a new activity is proposed for the subject of Science for year 4 of Primary Education. Recommendations of action will be limited in order to assess to what extent this tool can be concise.

The activity would be about writing a news article on the impact of plastics in the sea for the School's Digital Newspaper. ChatGPT was asked to give recommendations on how the teacher can adapt the activity to the student with visual difficulties. Prompt (7) was as follows:

(7) Provide three recommendations for adapting this activity for a student who has visual problems: write a news article on the impact of plastics in the Sea for the School's Digital Newspaper.

In contrast, the following recommendations are provided for the pupil with Asperger's syndrome through Prompt (8):

(8) Provide three recommendations for adapting this activity for a student with Asperger's syndrome: write a news article on the impact of plastics in the Sea for the School's Digital Newspaper.

4. RESULTS AND DISCUSSION

4.1. Output of prompts: a critical assessment

Undoubtedly, ChatGPT offers very useful resources and information for CLIL contexts, but these require the teacher's revision. The appropriateness of the content is rarely very precise; in fact, if prompts contain several items to be considered, the tool does not address all of them in a thorough way. For this main reason, the prompt is required to be simple and concise. Once the prompts have been created in line with this criterion of conciseness, the results obtained from ChatGPT are added below.

4.1.1. Results of Experiment I

Output from ChatGPT for Prompt (1):

Sure! Here's an activity for the Music subject about flamenco dance for a group of Year 4 students that encourages active participation and the development of critical thinking skills:

Activity: "Exploring Flamenco Dance"

Objective: To introduce students to the art of flamenco dance, promote active participation, and develop critical thinking skills.

Materials needed:

Speakers or a music player

Flamenco music recordings

Scarves or shawls (optional)

Instructions:

Introduction (5 minutes):

Begin by discussing flamenco dance as a traditional dance form from Spain. Explain that it combines expressive movements, rhythmic footwork, and intricate hand gestures.

Show images or videos of flamenco dancers to give students a visual understanding of the dance style.

Movement Exploration (10 minutes):

Play a lively flamenco music piece and encourage students to move freely in the space while expressing themselves through their own dance movements.

Ask students to pay attention to the different ways they can use their bodies to convey emotions and rhythms.

Emotion and Expression (10 minutes):

Discuss with the students the importance of expressing emotions in flamenco dance. Talk about how dancers use their facial expressions, hand movements, and body language to convey different feelings.

Assign different emotions (e.g., happiness, sadness, anger) to small groups of students.

Play various flamenco music pieces and ask each group to create a short dance sequence that represents their assigned emotion. Encourage them to think critically about how they can use movements to convey the assigned emotion effectively.

Choreography Creation (15 minutes):

Divide the class into small groups of 3-4 students.

Provide each group with a section of a flamenco music piece.

Instruct the groups to work collaboratively to create a simple choreography using basic flamenco steps and movements. Encourage them to incorporate the emotions they explored earlier.

Optionally, provide scarves or shawls for students to use as props, as flamenco dancers often incorporate them into their performances.

Group Performances (15 minutes):

Have each group present their choreography to the rest of the class.

After each performance, engage the audience in a critical discussion by asking questions such as: What emotions did you perceive in the dance? How did the movements and expressions contribute to conveying those emotions? What elements of flamenco dance did you notice?

Reflection and Discussion (5 minutes):

Lead a brief class discussion on the significance of emotions and expressions in dance, specifically in flamenco. Discuss how critical thinking skills were utilized during the activity, such as interpreting music, creating choreography, and analyzing the connection between movement and emotion.

By incorporating this activity into the Music curriculum, Year 4 students will have the opportunity to actively engage in flamenco dance, explore emotions, and develop critical thinking skills through movement and expression.

Output from ChatGPT for Prompt (2):

Sure! Here's a simple activity for the Physical Education subject about popular games for a group of Year 4 students that encourages active participation, critical thinking skills, and creativity:

Activity: "Game Remix Challenge"

Objective: To engage Year 4 students in popular games while promoting active participation, critical thinking, and creativity.

Materials needed:

Open space for physical activity

Cones or markers to define playing areas (if needed)

Paper and pencils/markers

Instructions:

Introduction (5 minutes):

Gather the students and explain that they will be participating in a "Game Remix Challenge" where they will reimagine and create their own versions of popular games.

Discuss the importance of critical thinking and creativity in modifying and adapting games.

Game Selection (5 minutes):

Present a selection of popular games such as tag, relay races, or capture the flag.

Allow students to vote on the game they would like to remix and play. The game with the most votes will be chosen.

Brainstorming and Planning (10 minutes):

Divide the class into small groups of 3-4 students.

Instruct each group to brainstorm ideas for modifying the chosen game. Encourage them to think creatively and consider changes to rules, objectives, or gameplay elements.

Provide paper and pencils/markers for the groups to sketch or write down their ideas and plan their game remix.

Game Remix Presentation (15 minutes):

Each group presents their game remix to the rest of the class.

Encourage them to explain their modifications, the reasoning behind their changes, and how it enhances the gameplay experience.

The presentation can include sketches, diagrams, or a brief demonstration of the modified game if possible.

Game Remix Playtime (15 minutes):

After all the presentations, allow time for the groups to play their game remixes.

Ensure that each group gets a chance to play their modified game and that all students actively participate.

Reflection and Discussion (5 minutes):

Gather the students and lead a class discussion on the activity.

Ask students to share their thoughts on the game remix challenge. What did they learn from modifying the game? How did their changes impact the gameplay experience? Did they enjoy the creative process?

Emphasize the importance of critical thinking, teamwork, and creativity in both game design and physical activities. By engaging Year 4 students in this "Game Remix

Challenge," they will actively participate in popular games, develop critical thinking skills, and unleash their creativity. This activity encourages students to think outside the box, adapt game elements, and consider the impact of their modifications, fostering a deeper understanding and appreciation for game design and physical activities.

Output from ChatGPT for Prompt (3):

Title: "Ecosystem Explorers"

Objective: The objective of this activity is to engage Year 4 students in a cooperative learning experience that promotes critical thinking, oral communication skills, and active participation while exploring ecosystems.

Materials:

Pictures or cards representing different organisms (plants and animals) found in various ecosystems.

Large sheets of paper or poster boards.

Markers or colored pencils.

Timer or stopwatch.

Procedure:

Introduction (5 minutes):

Begin by reviewing the concept of ecosystems and their importance.

Explain that ecosystems consist of different organisms that interact with each other and their environment.

Emphasize the need for cooperation and teamwork to understand ecosystems effectively.

Cooperative Exploration (10 minutes):

Divide the students into small groups of 4-5 members.

Provide each group with a set of pictures or cards representing different organisms found in ecosystems.

Instruct the students to work together to classify the organisms into different categories based on their characteristics, such as habitat, diet, or adaptations.

Encourage the students to engage in discussions within their groups, considering different perspectives and justifying their categorization choices.

Group Presentation (5 minutes):

Allocate a specific time limit for the groups to prepare a short oral presentation.

Each group will present their classification system and explain their reasoning behind it to the rest of the class.

Encourage the groups to use the large sheets of paper or poster boards to create visual representations of their classification systems, including drawings and labels.

Cooperative Reflection (5 minutes):

After each group presentation, ask the other groups to provide feedback and constructive comments on the presented classification system.

Encourage active listening and critical thinking by prompting questions and facilitating discussions among the students.

Allow the presenting group to respond and defend their choices, fostering a cooperative dialogue.

Wrap-up (2 minutes):

Summarize the main points discussed during the activity, highlighting the importance of cooperation and critical thinking in understanding ecosystems.

Encourage students to reflect on what they have learned and how it relates to the real world.

Conclude the activity by emphasizing the ongoing need for cooperation and teamwork in addressing environmental challenges.

Note: The duration of each section can be adjusted based on the available time and the pace of the students.

After assessing the different activities created by using Prompt (1), Prompt (2), and Prompt (3), it should be noted that they have met our expectations. The main reason is that activities develop students' competences (e.g., problem solving) that lead to the desired learning outcomes and offer comprehensible activities for students, including simple and realistic vocabulary to be used in a classroom context in the specified subjects and topics.

Regardless of whether they require physical movement or not, interaction is encouraged through discussion, brainstorming, or reflection. Furthermore, materials suggested are realistic as they are accessible for any school. In the case of Music, the inclusion of emotional education is the most outstanding aspect. This aspect means that the tool has collected evidence of the importance of working on emotions from different sources. Emotions are part of students and working on them will break down barriers to learning, as “it is believed that emotions affect the internal motivation of students to learn based on interest and curiosity in learning as well as their external motivation associated with the achievement of positive results or to prevent negative consequences” (Mustafina, Ilina,& Shcherbakova, 2020: 319). Needless to say, it is even conceived in education laws as an essential teaching aid that is gradually leaving behind the traditional ideas that perceived students as mere receivers of knowledge. This paradigm shift is the result of how emotions were conceived and interpreted in the past.

Emotions have been viewed as something fuzzy, difficult to tease apart into its different dimensions, and difficult to research. They were often typically regarded as ‘soft’ and irrational in comparison to the ‘hard’, quantifiable and rational facts about second language learning and teaching that were the focus of much research attention from the 1970s. (Richards, 2022: 226)

As regards Physical Education, expectations are fulfilled. It proposes coherent activities and promotes creativity through the creation of a remix of games. It is a very motivating and innovative task. In relation to the difficulty, it is required to be low but the fact that it invites to discuss the importance of critical thinking is not the most convenient because students may see it as something abstract. The idea is that students develop critical thinking skills instead of knowing why they need to develop them at this age. Seemingly, the complexity of the activity has not changed in relation to the activities of Music and Science. This is further evidence that the tool cannot predict what is difficult for a student of a certain age, as it completely ignores essential information such as individual characteristics of students or their academic background if it is not specified very accurately.

The activity designed for Science is in line with the instructions and, most importantly, has drawn on the Cooperative Learning (CL) methodology to find the most suitable technique for that activity at that level. Through this proposal, it promotes the discussion of ideas, the acceptance of different points of view and, ultimately, equal participation as the basis for cooperation among equals. In agreement with Akdemir (2017), “the key concept for CL is interaction of partners as it allows constructing, sharing and using knowledge from different

perspectives” (Akdemir, 2017: 183). One of the requirements was to promote the development of critical thinking skills and this requirement has been covered through group reflections. Effective thinking is developed through collaboration by approaching things from different perspectives and respecting others' ideas (Florea & Hurjui, 2015).

Considering the results of Prompt (1), Prompt (2) and Prompt (3), general conclusions can be drawn. Certainly, the tool has a clear structure that directly reflects the parts that should be included in an activity, such as the title, objectives, materials, and timing, among others. Nonetheless, there is an evident misunderstanding as the tool does not differentiate between activities, tasks, and sessions.

It can be seen that the prompt has requested activities and that ChatGPT has created sessions with different activities that lead to the realisation of a final task by following the Task-Based Language Learning methodology. In this case, Task-Based Learning (TBL) is in line with the objectives, since as Daga (2022) stated: “it is focused on prioritizing real communication rather than grammar exercises or drills” (Daga, 2022: 8). As an example, there are pre-activities, as a discussion of the possibility of modifying games, and post-activities, as a reflection of the process and the product, in order to create a remix of games. This is not a serious problem but it demonstrates that ChatGPT is unclear about different concepts in the field of education and therefore it cannot be taken at face value.

In brief, these three activities aim to develop critical thinking skills and promote an active role on the part of the learner. Moreover, there are other different aspects beyond the subject matter such as creative production and special emphasis on the development of oral skills in L2. The inclusion of a cooperative technique in Prompt (3) is one of the most significant variables. Any variable can be determinant to vary the methodological approach or the development of a particular language skill. In terms of methodology, it promotes the creation of task-oriented activities.

4.1.2. Results of Experiment II

Output from ChatGPT for Prompt (4):

In the sky, water goes up high,
Sun heats it, reaching the sky.
Floating clouds, so fluffy and white,

They hold water, oh what a sight!

Clouds get heavy, rain starts to fall,

Drops from the sky, for one and all.

Snowflakes gently cover the ground,

Nature's cycle, going around.

Hail may come, with a little tap,

Water's journey, a never-ending lap.

Remember, my friend, it's nature's game,

Water's cycle, always the same.

Output from ChatGPT for Prompt (5):

In the deep jungle, jaguars jump and play,

Monkeys swing and have a fun-filled day.

Elephants roam with a graceful grace,

Lions roar, ruling their vast space.

Output from ChatGPT for Prompt (6):

Hey classmates! Check out our awesome Year 4 video all about #HealthyEating! Learn how to make #BalancedMeals, choose #SmartSnacks, and stay hydrated with #RefreshingWater. We've got easy and tasty recipes too! Let's rock a healthy lifestyle together! #StayHealthy #Year4Power

On the one hand, the results for Prompt (4) and Prompt (5) fulfil the requirements concerning the topic and the grade. The result for Prompt (4) successfully converted the text into a poem. ChatGPT recognised the features of a poem and its structure to such an extent that it divided the poem into stanzas. Additionally, the vocabulary has been adapted to children. As for the results for the Prompt (5), it is a very simple tongue twister suitable for students who are learning a foreign language. In terms of the content itself, it focuses on the jungle and it was

not specified in the prompts, which means that it would only be useful when working on this habitat. Lastly, the choice of words is remarkable because their combination will make the sounds easy to confuse in a quick reading.

On the other hand, the output for Prompt (6) demonstrates that ChatGPT recognises the format of Youtube descriptions, as it makes the text short and appealing to the audience by including hashtags to reach more viewers. Regarding the potential of using digital platforms in education, it can be the key to fostering the development of digital competence. ChatGPT has emerged in a technological era and this entails being aware of the different technological resources available even though they are not virtual assistants. Nowadays, a large part of society uses social networks or video platforms such as Youtube and it can generate very enriching activities or projects for students. Focusing on this text, it could have been produced by a pupil and is perfectly suited to the topic and age group.

4.1.3. Results of Experiment III

Output from ChatGPT for Prompt (7):

1. Provide tactile materials and models to help the student understand and explore the concepts related to plastic's impact on the sea.
2. Offer alternative formats for accessing information and writing, such as braille, large print, or digital resources with adjustable settings for font size and contrast.
3. Encourage collaboration and support from peers or teachers to provide descriptions of visual elements and assist in accessing visual information.

Remember to consider the specific needs of the student and collaborate with relevant individuals to ensure an inclusive and accessible learning experience.

Output from ChatGPT for Prompt (8):

1. Provide clear instructions and structure for the activity, breaking it down into manageable steps and using visual aids or written cues.
2. Utilize visual supports and organizational tools, such as visual schedules, charts, or graphic organizers, to help the student organize their thoughts and ideas for the news article.
3. Incorporate the student's special interests into the topic of the news article to increase engagement and motivation, allowing them to bring their unique perspective to the project.

Remember to individualize the recommendations based on the student's specific needs and collaborate with relevant individuals to create an inclusive and supportive learning environment.

Both outputs provide realistic information associated with these specific needs. Nevertheless, it demonstrates that the tool is not aware of specific information and, therefore, such generalised information may not be useful for the teacher or the pupil. In the case of the student with visual difficulties, no mention is made of being blind or having severe visual problems, and ChatGPT recommends the use of Braille. This would be an excessive measure for a pupil with slight visual impairment.

Conversely, the organisational strategies offered for the learner with the Asperger's syndrome can be applied seamlessly. In this case, providing general strategies has been found to be beneficial. At this point, it is worth remembering that a child with Asperger's syndrome (a form of ASD) mostly presents social difficulties, which is what Marsh (2013) clarified by saying that “there are no clinically significant delays in language or cognition or self-help skills or in adaptive behaviour, other than social interaction” (Marsh, 2013: 277). An awareness of this information is fundamental as we cannot be blinded by the importance of working on language or content, since that would not be the problem but rather the difficulty of interacting with peers. This demonstrates that the development of social skills is determinant for the teaching-learning process in a learning situation in which the student creates, reflects, and learns through individual and collective discovery.

Because of these reasons, catering for diversity is the responsibility of the whole educational community and mainly of the teacher who is in direct contact with the pupil and is aware of his or her reality. Because of that, one of the most crucial aspects to assess a tool is how we can adapt its use for students with SEN.

Bearing in mind the results of the three experiments, there are several findings. ChatGPT is a great tool to be used as creator of activities and resources. It can be assumed that different skills can be worked on if they are included in the prompt or if the teacher adapts the activity. In view of these possibilities, the role of the teacher remains irreplaceable as the facilitator of the appropriate prompt and as the one who critically evaluates it. According to Koraishi (2023), “it is essential to recognize that ChatGPT is a tool that can be used to support teachers rather than replace them, at least for the time being” (Koraishi, 2023: 70).

As for scaffolding, I see no evidence of such scaffolding in the activities created for learners. This is clearly illustrated by the outputs obtained through the Prompt (1), Prompt (2) and Prompt (3) in which it is not clearly specified that an adaptation is demanded and it is only in Prompt (3) where the tool points out that we should respect the pace of the learners, which is very general and empty advice with no guidelines or tips to follow.

Regarding Prompt (7) and Prompt (8), it is true that requesting adaptive measures can lead to coherent measures but, in case the learner needs an easy activity as it is specified in Prompt (2), ChatGPT just offers a simple structure of the activity to follow step by step. If extra scaffolding is required, ChatGPT follows the instructions included in the prompt; for example, it can transform the complex vocabulary of an activity statement into a simpler and more understandable one for children. Even for humans, it is difficult to differentiate the vocabulary known by an 8-year old or a 9-year old student because of the different learning paces. It could be said that ChatGPT uses the concept "children" as a reference to simplify the vocabulary in order to find the scaffolding strategy according to what is socially and academically established about what a child can understand because of his or her cognitive development.

All adaptations requested from ChatGPT should be analysed by the teacher as the unique responsible for the implementation of the rules and guidelines. The teacher's academic and professional background should be sufficiently broad to determine the validity of the proposal. Despite offering specific adaptations for a particular disorder, ChatGPT offers generic adaptations, which means that the individual characteristics of pupils must be borne in mind. It requires an extra effort on the part of the teacher to ensure that the adaptation can be adapted to the pupil's needs successfully.

Finally, it is essential to emphasise the suggestions added at the end of each activity. The tool itself is aware of its limitations, so it reminds the teacher of the need to review the output and to pay special attention to certain educational aspects such as respecting the learning pace of each student. Thus, through very general advice, it relies on the teacher's knowledge to assess the best adaptation of students according to their characteristics, as can be seen in the output provided for the Prompt (3).

4.2. Limitations and difficulties of use

ChatGPT is not a tool exempt from committing errors and producing inaccurate content; in fact, it has serious limitations that could lead to confusion or misunderstandings if there is not a critical judgement of what it offers. First of all, limitations of the tool from the point of

view of the learner as a user must be mentioned to value its adequacy in case it is implemented in class.

The quality of responses suffers if the user's replies are delayed. Consequently, the fluency and continuity of the conversation may be worsened. For learners, time demands on the exchange of messages can lead to frustration, which would be a very negative aspect for the teaching-learning process. Another factor that slows down the communicative exchange is the server overload. Against this background, it is advisable that students interact by using short, simple messages and different strategies such as requesting a summary of a text in order to understand the key ideas.

This being clear, different limitations are evident when the teacher creates materials. To begin with, the text data on which it was trained is slightly outdated, which may lead to the production of erroneous data. It implies that the most innovative methodologies and current educational laws may not be included in the information provided. This is related to the lack of verification, since the information and resources it provides are not supervised by any human before being delivered to the user. It means that any person can obtain erroneous information and believe it to be valid because it comes from Internet.

Even though it is a free and easily accessible tool, it requires an appropriate development of digital competence. In this regard, the student must learn how to use it and must have enough strategies to do so in a responsible and coherent way with clear purposes. Undoubtedly, this requires the teacher to be an expert in the use of this tool in order to maximise its effectiveness and guide learners towards the achievement of objectives. Shidiq (2023) argued that the role of the teacher was crucial when using this tool, since the teacher has to “be responsible for determining how to use it honestly, with integrity and transparency, and agree on some rules of engagement” (Shidiq, 2023: 355).

Being familiar with the tool enables teachers to provide appropriate guidance to their learners and to deal with any challenges that may arise during practice. Monitoring its use can be crucial to ensure that it positively contributes to the teaching-learning process. In fact, generic answers require the teacher's adaptation. The reason behind this is the fact that ChatGPT is not aware of the classroom context and, even if information is provided, it may never be enough to deal with all the emotional and cognitive aspects involved in the classroom. This does not only apply to significant learning adaptations but also to the individual characteristics of each student and their interests. Madrid & Barrios (2018) clearly explained

that “students’ diversity, their special needs and interests, multiple intelligences and cognitive styles are also of great importance and influence their academic achievement” (Madrid & Barrios, 2018: 30).

5. CONCLUSIONS

Throughout this dissertation, several conclusions can be drawn about the use of ChatGPT in the classroom within the CLIL approach. In general terms, AI is causing a great change in the educational sphere and this should not be seen as a negative aspect for the development of critical thinking, but rather we should embrace it and exploit its potential.

Fears and mistrust have been expressed by teachers who believe that students may use this tool to plagiarise or copy content without processing this information under a critical judgement, and educators should know that to deny them its use is to close off a range of possibilities. Hong (2023) is sending a hopeful message regarding the change in teacher's mindset regarding the use of ChatGPT, by claiming that “after the initial wave of apprehension, teachers will begin to see the bright side of the changes, so that they can fully embrace the benefits and opportunities brought by new technology” (Hong, 2023: 42).

Teachers can encourage the use of this tool to inspire students and provide them with ideas, thus opening the doors to new educational practices for the present and the future. In agreement with Chomsky, Roberts, and Watumull (2023), there is a generalised apathy towards the use of ChatGPT shared by a large part of society:

Today our supposedly revolutionary advancements in artificial intelligence are indeed cause for both concern and optimism. Optimism because intelligence is the means by which we solve problems. Concern because we fear that the most popular and fashionable strain of A.I. — machine learning — will degrade our science and debase our ethics by incorporating into our technology a fundamentally flawed conception of language and knowledge. (Chomsky et al, 2023: 2)

Analysing and reflecting on the suitability of ChatGPT is essential to assess whether this tool can contribute something positive to the teaching-learning process. Nonetheless, teachers must be aware that it is not a magic instrument, as it requires human intervention to be improved and updated. In this respect, technological resources that can contribute to educational progress must be included in the teaching process without being held back by ignorance. The teacher must become an expert prompt engineer and user with ChatGPT and other AI tools through research and experimentation in order to discover all their capabilities.

Therefore, teachers must be aware of the need to provide quality, meaningful, and contextualised education. They cannot delegate their work to a tool that lacks critical judgement, is unfamiliar with the classroom context and is in a process of experimentation and improvement.

In relation to CLIL, ChatGPT can be a very powerful tool that allows teachers to provide prompts for specific language skills they intend to work on. Besides, it is a very inspiring tool that includes very innovative and creative proposals to make the teaching of contents in a foreign language a motivating and realistic experience aligned with the students' learning styles. Needless to say, reluctance will not lead us to realise the full potential of the tool.

It is well known that some students experience difficulties within CLIL because of their very basic knowledge of L2 and ChatGPT can offer good options for scaffolding and accepting different learning paces. A fundamental aspect in any area is attention to diversity. Ramos (2023) claimed that "attention to diversity continues to be the main lacunae of bilingual education" (Ramos, 2023: 1105). Due to its importance, any technological tool that we include in our lessons must be accessible to all students in some way. It is not only in terms of affordability, but also in terms of how they can be handled, since "inclusive education happens when children with and without disabilities participate and learn together in the same classes" (Peerzada, Bashir & Bashir, 2020: 168). Diversity enriches us as a society, and every learner, regardless of their educational learning needs, can change the world. Holding a child back from learning because of difficult-to-use tools is not fair, as there is nothing farther from equity. As such, when using ChatGPT in the classroom, all needs and characteristics of learners must be borne in mind as a priority requirement.

Overall, ChatGPT can be a great tool if users are able to make the most of it. If we reflect on the evolution of education throughout history and the resources used in the classroom, the textbook has been the teacher's ally for many years and its relationship of dependence has been very evident. New methodologies have conceived the student as the protagonist of learning and technology has accelerated this new teaching and learning paradigm.

It could be said that many teachers have a relationship of dependency with textbooks, as they use them as an essential tool around which their teaching practice revolves instead of using them as another tool that they integrate into their practice. Will this relationship of dependence be established in the future with AI and, in particular, with ChatGPT? No one knows about the future, but educational objectives such as the holistic development of pupils

are well known and must be pursued to provide quality education. Among other priorities, the development of digital competence is becoming a priority in an increasingly digitalised world and tools as ChatGPT can pave the way for an easier and more complete transition in this technological era, as shown in this dissertation.

As a closing thought, we should not fear the integration of AI into our lives, but rather focus on enriching ourselves with the benefits it brings to society. We fear the unknown, but AI emerges from existing technologies. AI is the metamorphosis of all technologies (Elliott, 2019).

6. BIBLIOGRAPHY

- Akdemir, A. S. (2017). eTwinning in Language Learning: The Perspectives of Successful Teachers. *Journal of Education and Practice*, 8(10), 182-190.
- Ali, J. K. M., Shamsan, M. A. A., Hezam, T. A., & Mohammed, A. A. (2023). Impact of ChatGPT on learning motivation: teachers and students' voices. *Journal of English Studies in Arabia Felix*, 2(1), 41-49.
- Ayu, M., & Inderawati, R. (2019). EFL textbook evaluation: The analysis of tasks presented in English textbook. *Teknosastik*, 16(1), 21-25.
- Bao, M. (2019). Can home use of speech-enabled artificial intelligence mitigate foreign language anxiety – investigation of a concept. *Arab World English J.* 5, 28–40. doi: 10.24093/awej/call5.3
- Baskara, F. R. (2023). Integrating ChatGPT into EFL writing instruction: Benefits and challenges. *International Journal of Education and Learning*, 5(1), 44-55.
- Bloom, B.S. (1956) *Taxonomy of Educational Objectives, Handbook: The Cognitive Domain*. David McKay, New York.
- Cai, Z. G., Haslett, D. A., Duan, X., Wang, S., & Pickering, M. J. (2023). Does ChatGPT resemble humans in language use?. *arXiv preprint arXiv:2303.08014*.
- Cheung A, Slavin RE (2012) *The Effectiveness of Educational Technology Applications for Enhancing Reading Achievement in K-12 Classrooms: A Meta-Analysis*. Baltimore, MD: Johns Hopkins University, Center for Research and Reform in Education.

- Chomsky, N., Roberts, I., & Watumull, J. (2023). Noam Chomsky: The False Promise of ChatGPT. *The New York Times*, 8. <https://www.nytimes.com/2023/03/08/opinion/noam-chomsky-chatgpt-ai.html>
- Clark, D. (2018). To Siri with love- how chatbots are becoming social companions and teacher. Retrieved from <http://donaldclarkplanb.blogspot.com/2018/06/social-learning-andchatbots.html>
- Common European Framework of Reference for Languages. Council of Europe. (2001).
- Coppin, B. (2004). *Artificial intelligence illuminated*. Jones & Bartlett Learning.
- Coyle, D. (2007). Content and Language Integrated Learning: Towards a connected research agenda for CLIL pedagogies. *International Journal of Bilingual Education and Bilingualism*, 10(5), 543-562.
- Coyle, D. (2015). Strengthening integrated learning: Towards a new era for pluriliteracies and intercultural learning. *Latin American Journal of Content & Language Integrated Learning*, 8(2), 84-103.
- Cullinan, B. E., Scala, M. C., & Schroder, V. C. (1995). Three voices: An invitation to poetry across the curriculum. York, ME: Stenhouse Publishing.
- Cunningham-Nelson, S., Boles, W., Trouton, L., & Margerison, E. (2019). A review of chatbots in education: practical steps forward. In *30th annual conference for the australasian association for engineering education (AAEE 2019): educators becoming agents of change: innovate, integrate, motivate* (pp. 299-306). Engineers Australia.
- Daga Remache, G. F. (2022). *Task-based learning method (TBL) in the development of English-speaking skills* (Master's thesis, Pontificia Universidad Católica del Ecuador).
- Drossel, K., Eickelmann, B., & Schulz-Zander, R. (2017). Determinants of teachers' collaborative use of information and communications technology for teaching and learning: A European perspective. *European Educational Research Journal*, 16(6), 781-799.
- Elliott, A. (2019). *The culture of AI: Everyday life and the digital revolution*. Routledge.

- Escueta, M., Quan, V., Nickow, A. J., & Oreopoulos, P. (2017). Education technology: An evidence-based review. NBER Working Paper No.23744. Retrieved from <https://www.nber.org/papers/w23744>
- Fahmi, R., Friatin, L. Y., & Irianti, L. (2020). The use of flipped classroom model in reading comprehension. *Journal of Applied Linguistics and Literacy*, 4(1), 77-94.
- Florea, N. M., & Hurjui, E. (2015). Critical thinking in elementary school children. *Procedia-Social and behavioral sciences*, 180, 565-572.
- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3, 275-285.
- Han, J., Yoo, H., Kim, Y., Myung, J., Kim, M., Lim, H., ... & Oh, A. (2023). RECIPE: How to Integrate ChatGPT into EFL Writing Education. *arXiv preprint arXiv:2305.11583*.
- Herold, B. (2016). Technology in education: An overview. *Education Week*, 20(7), 129-141.
- Hong, W. C. H. (2023). The impact of ChatGPT on foreign language teaching and learning: opportunities in education and research. *Journal of Educational Technology and Innovation*, 5(1).
- Huang, W., Hew, K. F., & Fryer, L. K. (2022). Chatbots for language learning—Are they really useful? A systematic review of chatbot-supported language learning. *Journal of Computer Assisted Learning*, 38(1), 237-257.
- Instruction 20/2022, of July 21, on language assistants for the school year 2022-2023. <https://www.juntadeandalucia.es/educacion/portals/delegate/content/d360f4d0-3636-4a21-9614-e6807e260882/Instrucciones%20auxiliares%20de%20conversaci%C3%B3n%2022-23>
- Instruction 21/2022, of July 21, on the organisation and implementation of bilingual education in Andalusia for the school year 2022-2023. <https://www.juntadeandalucia.es/educacion/portals/delegate/content/2d1fa2a2-da55-42e1-a1ac-74d0f88146ba/Instrucciones%20ense%C3%B1anza%20biling%C3%BCe%2022/23>
- Jan, H. (2017). Teacher of 21st century: Characteristics and development. *Research on Humanities and Social sciences*, 7(9), 50-54.

- Kasneci, E., Seßler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., ... & Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, 102274.
- Kiely, R. (2011). CLIL—History and background. *Guidelines for CLIL implementation in primary and pre-primary education*, 21.
- Klímová, B., & Ibna Seraj, P. M. (2023). The use of chatbots in university EFL settings: Research trends and pedagogical implications. *Frontiers in Psychology*, 14, 1146.
- Kolb, L. (2017). *Learning first, technology second: The educator's guide to designing authentic lessons*. International Society for Technology in Education.
- Koraishi, O. (2023). Teaching English in the age of AI: Embracing ChatGPT to optimize EFL materials and assessment. *Language Education and Technology*, 3(1).
- Kurzweil, R. (2006). Reinventing humanity: the future of machine-human intelligence. *The Futurist*, 40(2), 39.
- Kushmar, L. V., Vornachev, A. O., Korobova, I. O., & Kaida, N. O. (2022). Artificial Intelligence in Language Learning: What Are We Afraid Of. *Arab World English Journal (AWEJ) Special Issue on CALL* (8), 262-273. <https://dx.doi.org/10.24093/awej/call8.18>
- Lo, C. K. (2023). What is the impact of ChatGPT on education? A rapid review of the literature. *Education Sciences*, 13(4), 410.
- Madrid Fernández, D., & Barrios, E. (2018). A comparison of students' educational achievement across programmes and school types with and without CLIL provision. *Porta Linguarum*, 29, 29-50.
- Marsh, D. (2013). Content and Language Integrated Learning (CLIL). A Development Trajectory. *Universidad de Córdoba*, 20-516. Retrieved from <http://hdl.handle.net/10396/8689>
- Marsh, D., & Hood, P. (2008). Content and language integrated learning in primary East Asia contexts (CLIL PEAC). In *The proceedings of the primary innovations regional seminar*, 43-50.
- Mhlanga, D. (2023). Open AI in education, the responsible and ethical use of ChatGPT towards lifelong learning. *Education, the Responsible and Ethical Use of ChatGPT Towards*

- Lifelong Learning* (February 11, 2023). Retrieved from <https://ssrn.com/abstract=4354422>
- Mustafina, R. F., Ilina, M. S., & Shcherbakova, I. A. (2020). Emotions and their Effect on Learning. *Utopía y praxis latinoamericana: revista internacional de filosofía iberoamericana y teoría social*, (7), 318-324.
- Nye, D. E. (2007). *Technology matters: Questions to live with*. MIT Press.
- OpenAI. (2023). ChatGPT [Artificial intelligence software]. Retrieved from <https://www.openai.com/>
- Organic Law 3/2020, of December 29, which modifies Organic Law 2/2006, of May 3, on Education, Official State Bulletin, 340, of December 30, 2020. 122868-122953. <https://www.boe.es/boe/dias/2020/12/30/pdfs/BOE-A-2020-17264.pdf>
- Patel, S. B., Lam, K., & Liebreinz, M. (2023). ChatGPT: friend or foe. *Lancet Digit. Health*, 5, e102.
- Peerzada, N., Bashir, N., & Bashir, R. (2020). Inclusive Education. *Journal of applied research in education*, 25(1), 168-176. Retrieved from <http://education.uok.edu.in/Files/4f96dde9-9a35-46c7-9b3e-c80291ed5689/Journal/1d092900-1411-4db4-a704-f11496de7395.pdf>
- Pérez Cañado, M. L. (2009). Reengineering English Language Teaching: Making the Shift towards "Real" English. *English Language Teaching*, 2(3), 3-10.
- Puspitarini, Y. D., & Hanif, M. (2019). Using Learning Media to Increase Learning Motivation in Elementary School. *Anatolian Journal of Education*, 4(2), 53-60.
- Ramos, P. R. (2023). Attention to Diversity in Bilingual Education: Stakeholder Perceptions in a Bilingual Region. *Journal of Language Teaching and Research*, 14(4), 1094-1107.
- Rani, K. J., Kranthi, T., & Anjaneyulu, G. (2013). Teaching and learning English as a Foreign/Second Language: Importance of learning strategies. *International Journal of English Language and Literature*, 1, 96-98.
- Rao, P. S. (2019). The role of English as a global language. *Research Journal of English*, 4(1), 65-79.
- Richards, J. C. (2022). Exploring emotions in language teaching. *RELC Journal*, 53(1), 225-239.

- Richardson, J., & Milovidov, E. (2019). *Digital citizenship education handbook: Being online, well-being online, and rights online*. Council of Europe.
- Rudolph, J., Tan, S., & Tan, S. (2023). ChatGPT: Bullshit spewer or the end of traditional assessments in higher education? *Journal of Applied Learning and Teaching*, 6(1).
- Santu, S. K. K., & Feng, D. (2023). TELeR: A General Taxonomy of LLM Prompts for Benchmarking Complex Tasks. *arXiv preprint arXiv:2305.11430*.
- Shawar, B. A., & Atwell, E. (2007). Chatbots: are they really useful?. *Journal for Language Technology and Computational Linguistics*, 22(1), 29-49.
- Shidiq, M. (2023). The use of artificial intelligence-based chat-gpt and its challenges for the world of education; from the viewpoint of the development of creative writing skills. In *Proceeding of International Conference on Education, Society and Humanity* (Vol. 1, No. 1, pp. 353-357).
- Stefanile, A. (2020). The transition from classroom to Zoom and how it has changed education. *Journal of social science research*, 16(1), 33-40.
- Tamrakar, R., & Wani, N. (2021). Design and development of CHATBOT: A review. In *Proceedings of International Conference On "Latest Trends in Civil, Mechanical and Electrical Engineering"*.
- Vygotsky, L.S. (1962). *Thought and language*. Cambridge, MA: MIT Press.
- Zhai, X., Chu, X., Chai, C. S., Jong, M. S. Y., Istenic, A., Spector, M., Liu, J., Yuan, J. & Li, Y. (2021). A Review of Artificial Intelligence (AI) in Education from 2010 to 2020. *Complexity*, 2021, 1-18.
- Zhong, Q., Ding, L., Liu, J., Du, B., & Tao, D. (2023). Can chatgpt understand too? a comparative study on chatgpt and fine-tuned bert. *arXiv preprint arXiv:2302.10198*.