CLIL Approach and the Fostering of "Creactical Skills" Towards a Global Sustainable Awareness^{1,2}

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Abstract

In this article we will present a study undertaken in the scope of a Content and Language Integrated Learning project, which was implemented at a local private primary school in the Oporto area, Portugal. This project takes into account the promotion of a teaching and learning process based on the fostering of 21st Century skills, the so-called "creactical skills", i.e., critical thinking and creativity into action (Ohler, 2013) and a global and sustainable awareness. By developing an action research project and following a mixed-method research methodology, we analysed the project's implementation, online questionnaires results, and other data including lesson plans, supervision reports/notes, pictures, videos and projects in order to find evidence of practices which foster the "creactical skills". The results show that pupils' critical thinking, creativity, collaboration, and cultural awareness skills may have been fostered, but there is still some work to be done regarding other skills mainly due to teachers' approaches which have to change.

Resumen

En este artículo presentaremos un estudio realizado en el marco de un proyecto de Aprendizaje Integrado de Contenidos e Idiomas, que se ha implementado en una escuela primaria privada local en el área de Oporto, Portugal. Este proyecto tiene en cuenta la promoción de un proceso de enseñanza y aprendizaje basado en el fomento de las habilidades del siglo XXI, las llamadas "habilidades creativas" (Ohler, 2013) y un desarrollo global y sostenible, mediante el cual cada niño tiene la oportunidad de desarrollar valores y comportamientos hacia un planeta futuro sostenible y una sociedad positiva transformación hacia la igualdad, el respeto a la diversidad y la búsqueda de algunas soluciones con relación a algunos problemas glocales. Al desarrollar un proyecto de investigación-acción y siguiendo una metodología de investigación de método mixto (cuantitativo y cualitativo), analizamos la implementación del proyecto, los datos de los cuestionarios en línea, y también algunos otros datos, tales como planes de lecciones, informes/notas de supervisión, foto-grafías, videos y proyectos para encontrar evidencia de prácticas que fomentan las "habilidades creativas".Los resultados muestran que es posible que se hayan fomentado el pensamiento crítico, la creatividad, la colaboración y las habilidades de conciencia cultural de los alumnos, pero aún queda trabajo por hacer en otras habilidades, principalmente debido a las metodologías de enseñanza de algunos profesores que deben cambiar.

Introduction

From an early stage in the European Union's history, the Council of Europe has given a great focus to the language teaching-learning process, encouraging plurilingual practices instead of multilingual practices (Council of Europe, 1997). In fact, one should promote from an early learning stage the so-called didactics of plurilingualism, "an approach based on project-based learning", which is based on the "use of interlinguistic (e.g., recourse to resources from other named languages in their plurilingual repertoire) and intralinguistic (lexical substitution and paraphrasing) procedures" (Llompart et al., 2020, p. 98).

The pioneers in the introduction and promotion of foreign language teaching in Basic Education were Scandinavian countries, such as Sweden, and Norway (Grim, 2002; Kubanek-German, 2004). In the Portuguese case, we found that the inclusion of English was only established in 2005 and was not mandatory. Indeed, a Content and Language Integrated Learning (CLIL) project has been implemented for four academic years. The so-called "Bilingual English Portuguese Project" was promoted by the Portuguese Ministry of Education and the British Council, in six public school clusters. The curricular areas taught through CLIL and in English were Study of the Environment and Artistic Expressions up to a period of time between 20% (5 hours) and 40% (10 hours) (Almeida, 2014, pp.17-18).

In this sparse context with regard to CLIL projects, the CLIL4U - implementation, monitoring and evaluation of a bilingual teaching project arises, a partnership between Colégio do Sardão and the School of Education of the Polytechnic of Porto, which relies on teachers specialized in language teaching in basic education, didactic resources in basic education, and pedagogical supervision in primary education.

In this article, we present the project and its assumptions, achievement and evaluation in relation to the fostering of "creactical skills" and a sustainable awareness. By employing a mixed-method approach, data are analysed. We attempted to focus our attention on the representations that students, teachers, and

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guardians have of the implementation of the project and its monitoring. At the same time, we analysed the practices implemented in the scope of the CLIL4U project that illustrate the development of the aforementioned skills. Our research questions were the following:

- 1. Which representations do pupils, teachers and parents of the CLIL4U project share in regard to the development of lifelong skills, namely, the creactical skills?
- 2. Which practices and resources foster the development of a global sustainable awareness within the context of primary learning?

CLIL Approach: Assumptions

According to Siguán and Mackey (1986), the CLIL approach promotes bilingualism and is a system in which teaching is carried out using two languages. In this scope both are seen as vehicle languages, being used in the learning of non-linguistic content. At the same time, learners develop skills through linguistic and communicative reflection that they have to carry out in their school routine, such as, regulating and facilitating the learning of both languages, stimulating creativity and developing critical thinking (Cummins, 1978, Duverger & Maillard, 1996)

According to Coyle et al. (2010), CLIL is seen as "an educational approach in which an additional language is used for the learning and teaching of both content and language" (p.1). Marsh (2002) also sees it as "any activity in which a foreign language is used as a tool in the learning of a non-language subject in which both language and the subject have a joint curricular role" (p.58). In fact, as stated by Ellison (2019),

CLIL is about teaching school curricular content through the use of an additional or vehicular language (...) in contexts where there is natural exposure and opportunities for authentic use of it for other learning, rather than when it is taught as a separate and sometimes 'isolated' subject. (p. 247)

Taking into account this theoretical basis, the bilingual teaching methodology that we proposed for the CLIL4U project involves the idea that it is essential that the practice of a foreign language extend to the study of different areas of knowledge, namely: geography, science, history, mathematics, etc. According to Ellison (2015), such an approach is consistent with the ethos of interdisciplinary and holistic learning, which is at the heart of primary education, and it is therefore essential that the practice of foreign language extend to other subjects, namely Mathematics and Environmental Studies.

The CLIL approach is a quite flexible approach, which "relates to aims and models, amount of CLIL, subjects taught and content involved, as well as teachers - content, language or both who are involved in preparation and actual classroom teaching" (Elison, 2015, p. 62). In fact, this means that there is no need to discard the mother tongue, which is recommended to be maintained. Teachers select content or modules from the other subjects, to be taught in the foreign language. Therefore, "the amount of CLIL will depend on the school context — this could mean entire subject areas taught through English over one or more academic years or modules or topics within curricular areas amounting to short sequences of lessons" (Ellison, 2019, p. 248).

In preparing a CLIL class, teachers should take into account four major components (see Table 1): content, communication, culture, and cognition (Coyle et al., 2010; Mehisto et al., 2008). With regard to the first component, the content, it is necessary to take into account the national curriculum (in Mathematics, Study of the Environment, etc.) and the students' previous knowledge. As for the communication component, students should develop the ability to use written and spoken language correctly. With regard to the concept of culture, the teacher must incorporate aspects of the target culture(s). Regarding the last component, cognition, it is recommended that teachers use the "K-W-L strategy"⁴ (Coyle et al., 2010), which stands for "what I Know", "what I Want to learn" and "what I did Learn" (Mehisto et al., 2008, p. 27). By activating students' background knowledge, the use of "KWL" charts cater for reflection and assessment of pupils' own learning paths. These charts, which consist of graphic organizers that make pupils aware of their knowledge and skills before, throughout and after a unit, can be put into practice to engage pupils in a new topic, confirm what they know about it and encourage them to (re)think about how they want to focus their own interests within the research process. As they conduct their research, which is guided by the teacher, they add information to the chart and showcase what was learned. The K-W-L charts may be used either individually or as a class activity but they help pupils monitor their own learning.

⁴ For further information on this well-know methodology in the scope of CLIL approach, visit this website: <u>https://www.nbss.ie/sites/de-fault/files/publications/kwl_comprehension_strategy_handout_copy_2_0.pdf</u>

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The 4 Cs	Description
Content	integrating content from across the curriculum through high quality language interaction
Cognition	engaging learners through creativity, higher order thinking and knowledge processing
Communication	using language to learn and mediate ideas, thoughts and values
Culture	interpreting and understanding the significance of content and language and their contribution to identity and citizenship

Table 1: The 4Cs of the CLIL Approach (Coyle et al., 2010, p. 12)

Taking all of this into consideration, "creactical skills"⁵ (Ohler, 2013) can be fostered by following a CLIL approach. These skills can be defined as tackling both critical thinking and creativity within classroom walls, so that children can use both in order to solve problems by following imaginative and productive processes. The ultimate goal is to create a project which culminates in changing something in their learning or even way of living.

All this being said, it is of utmost importance that teachers have the ability to (re)think in a multidisciplinary and collaborative way, "as opposed to 'subject-specific' ones" (Ellison, 2015, p. 62), as this collaboration between specialist language teacher and the generalist teacher will cater to the confluence of key techniques and strategies used in different areas (Ellison, 2019) and the co-construction of interdisciplinary didactic paths (Cruz, 2019). Therefore, the CLIL approach "unites language and primary generalist teachers in partnerships where they work together to achieve broad educational goals" (Ellison, 2014, p. 262).

Teachers should be invited to rethink their practices critically "towards developing a literacy rich, plurilingual classroom environment which through bilingual displays and use of language demonstrates the importance of learning and acceptance and appreciation of languages and culture" (Ellison, 2019, p. 261), in which digital, meaningful, authentic, and multisensory materials are implemented (Cruz, 2019).

The CLIL teaching method requires a positive and encouraging learning environment based on the involvement of students in linguistic and socio-cognitive tasks. Therefore, it integrates the techniques and methods of language teaching which are already effective for early foreign language learning (communicative approach, total physical response, multisensory approach, task-based learning, storytelling approach), by privileging the integration of realia and multimedia resources.

In fact, the CLIL approach caters for a holistic learning process, i.e., learning that integrates different subject domains and aims at supporting the child in his/her physical, psychosocial and cognitive development, by promoting more vital and meaningful learning (Carr, 2003, p. 126). Therefore, active and experiential learning and its tactile approach, which involves realia and digital resources and focuses on promoting authentic experiences to learners shall be followed. This also makes pupils more involved in learning and in the search to acquire knowledge through experimenting, forming hypotheses, checking these and later drawing on their conclusions, instead of getting ready made solutions. Moreover, it is a learning experience that allows pupils to develop their own understanding and knowledge of concepts and their relationships, by promoting critical manipulation of both physical and hypermedia resources.

In the context of teacher training in CLIL, scientific literature on this topic also highlight, on the one hand, the need for linguistic knowledge of teachers in English (level B1 recommended) and, on the other hand, knowledge of the CLIL approach and its strategies. In the next section we will present the CLIL4U project, regarding its organisation and implementation, including teacher training. We believe that this project can show both primary school generalist and specialist (English) teachers how the CLIL approach can enhance pupils' learning when combined with the development of creactical skills, and therefore aim at fostering pupils' own global, sustainable awareness. In the subsequent sections we will introduce the project, namely the representations that pupils, teachers, and parents have related to the implementation of this approach and the development of lifelong skills, and at the same time analyse practices and resources which may act as examples of good practices.

⁵ This concept will be presented further within another section.

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The CLIL4U Project: Organization and Implementation

In this section, we will analyze the curricular adaptations which were made, focusing on their implementation procedures, taking into account the overall development of the project.

Within the scope of the CLIL4U project, the bilingual teaching-learning process takes into account the official curriculum of the Ministry of Education, in which the pupils develop the following skills: "to develop multiple literacies that allow them to critically analyze and question reality, evaluate and select information, formulate hypotheses and make informed decisions in their daily life", "to deal with change and uncertainty in a rapidly changing world" and "think critically and autonomously, creatively, through collaborative work and communication skills" (Martins et al., 2017, p. 5).

Taking into account the previous objectives and articulating them with the CLIL approach, the following curricular adaptations were created: a) the Portuguese curriculum area were to be taught in its native language in its entirety; b) two thirds of the hours of the curricular areas of Artistic and Physical-Motor Expressions, Study of the Environment, and Mathematics were to be taught in Portuguese and one third of the hours of these courses in English; c) teaching English as a foreign language would remain an independent subject area.

The teaching philosophy adaptations were based on has four major spheres: 1) active and interdisciplinary learning; 2) individualized education, promoting self-regulation; 3) an integrated assessment of knowledge, using the European language portfolio; 4) a project pedagogy, in which students discuss current issues and problems, seeking to develop a critical cultural awareness.

The primary school teachers, who participated in CLIL4U project, took into account the specific curriculum of the different curricular and non-curricular areas, selecting the teaching units that are taught in the target language, taking into account the child's cognitive and cultural development. In turn, specialist language teachers ensured the correct pronunciation and expression of students, working collaboratively with full-time teachers in order to introduce written language from an early stage.

Ellis et al. (1992, p. 35) defend a methodology for integrating languages in other curricular areas, facilitating the fulfilment of Primary Education objectives, indicating that "through the integration the transfer of competences between the different areas is possible, helping the pupils to develop strategies of learning to learn". The curricular model previously proposed covers all areas that are studied in all primary school years, providing for other languages in the curriculum in which they are "the subject of no discipline, is in reality, the discipline of all subjects, of all subject matter and all learning procedures" (Baruk, 1985, p. 45).

It is in the first years of schooling that children build the bases for their future learning. The variety and richness of experiences that the school offers them allows them to prepare for integration into the pluricultural and plurilingual society in which we live (Starkey, 2002). The CLIL approach offers students the opportunity to use a foreign language in a natural context, promoting student-centered methodological dynamics that meet the challenges and skills of the 21st century: critical information analysis skills, language communication, digital literacy, leadership, critical thinking, collaboration, creativity, entrepreneurship and even problem solving (Cruz & Orange, 2016).

With the objective of developing a critical cultural awareness (Byram, 1997), teachers should, based on the culture of the students, make known social and cultural aspects of the target language, through the use of documentaries related to the Study of the Environment, radio or television programs, music, videoconference sessions with other European peers, etc. Given those, we seek to document learning through the language portfolio in which children are encouraged to compile and relate on all types of documents related to languages and cultures.

Taking into account all these assumptions, Colégio do Sardão's transition to a bilingual school started in the academic year 2017-2018 with the 1st grade. At the end of the three-year cycle, Colégio do Sardão is expected to be recognized as a bilingual school (see Table 1). Before the practical application of the project, we sought to carry out a state-of-the-art analysis and diagnose the needs to build an effective theoretical and practical model for the implementation, monitoring, and evaluation of bilingual projects, adapted to the context of Colégio do Sardão. As it is shown in Table 2, this model provides a set of language and pedagog-ical-didactic training sessions for teachers.

Actions	Measures	Period
Package Action 1	Implementation of the CLIL4U project at Colégio do Sardão, in two pilot groups: Creation of the necessary adaptations in terms of school materials and practices; Teacher training through the English course and seminars on the CLIL methodology; Inventory of other teacher training needs; Design of bilingual projects with the involved groups; Diagnostic assessment of bilingual practices and resources.	1st school year
Package Action 2	Project extension to the remaining school years; Creation of the necessary adaptations in terms of school materials and practices; Teacher training through the English course and seminars in CLIL methodology; Advanced teacher training through training courses in the Portuguese or European space, catering for the linguistic immersion of teachers; Inventory of other teacher training needs; Undertaking of national or European projects (if applicable); Diagnostic assessment of bilingual practices and materials.	2nd school year
Package Action 3	Project extension to the remaining school years; Creation of the necessary adaptations in terms of school materials and practices; Advanced teacher training through training courses in the Portuguese or European space, catering for the linguistic immersion of teachers; Undertaking of national or European projects (if applicable); Final evaluation of the project.	3rd school year

Table 2: The project implementation: Actions, measures and period

Taking into account the diagnosed needs, the majority of teachers indicate that they have level B1⁶ or higher in English. However, language seminars were created in order to respond to the needs of teachers. These language seminars related to A2/B1 level were undertaken at the end of the school year, prior to the implementation of the project and focused on the following contents: thematic (introductions, daily routine, city and countryside, animals, environment, food, among others) and grammatical (prepositions, adverbs, present simple, past simple, present perfect, future, among others). With regard to the pedagogical-didactic seminars, the sessions shown in Table 3 were given, which were guided by reflective theoretical and practical moments, focusing on Freire's (2007) learning philosophy: action-critical reflection-new action based on the critical reflection. In fact, these trainings were carried out taking into account this cycle so that teachers could experience more sustained practices in terms of their contexts and reflect on them at a later time. Through in-class discussions and dialogue, teachers were led into developing critical reflection. Through critical reflection, they were able to decide on how to conduct an appropriate response or action to tackle a specific didactic issue. After having implemented the strategies they learned within the sessions, they were able to discuss and critically analyse them, bringing up some comments and doubts and, at the same time, help others, by expressing their own opinions and talking about their own experience.

Seminar Title	Hours	Date
Introduction to the CLIL approach	2 hours	26/10/2017
CLIL teaching-learning strategies I	2 hours	02/11/2017
CLIL teaching-learning strategies II	2 hours	08/02/2018
Teaching to compare: from Linguistics to English as SL teaching ${\rm I}$	2 hours	29/11/2017
Teaching to compare: from Linguistics to English as SL teaching II	2 hours	10/01/2018
Teaching to compare: from Linguistics to English as SL teaching III	2 hours	17/01/2018
CLIL lesson planning I	2 hours	31/01/2018
21st century digital resources and skills	2 hours	21/02/2018
Reflection on CLIL practices	4 hours	11/04/2018

⁶ Level B1 is in accordance to the Common European Reference Levels, which are described here: <u>https://www.coe.int/en/web/com-mon-european-framework-reference-languages/table-1-cefr-3.3-common-reference-levels-global-scale</u>

CLIL lesson planning II	2 hours	12/04/2018
CLIL classroom language	2 hours	26/04/2018
Assessment in CLIL lessons	2 hours	10/05/2018
Adaptation and creation of CLIL resources	2 hours	23/05/2017
Other seminars based on teacher needs (ClassDojo, Edmodo, etc.)	2 hours	10/10/2017 (1hr) 16/11/2017 (1hr)

 Table 3: Pedagogical-Didactic Seminars

With regard to the work and training support platforms chosen for the project, we opted for Classdojo⁷ and Edmodo⁸. The first is a gamified application that is used to manage students' learning and attitudes in the classroom. The second is an application that allows the aggregation of content, such as plans and materials, as well as facilitating communication between teachers, supervisors, and researchers of the project.

The Creactical Skills and the United Nations Sustainable Development Goals in the CLIL Classroom

As we have seen in previous sections, the CLIL approach "makes teachers aware of their responsibility to educate the 'whole' child" (Ellison, 2019, p. 262) and to prepare them for the 21st century society we are living in, by following emancipatory, creative, and interdisciplinary learning paths (Cruz, 2019; Jiménez Raya et al., 2007; Ohler, 2013). As we can observe in Table 2, seminar topics focused on 21st century skills and teaching strategies which foster these. In fact, most of these seminars served the purpose of making teachers reflect upon their role in the teaching and learning process as students' helpers in their quest from "imperceptible, anonymous subjects, to interlocutors, to actors, of the new governance"⁹ (Mayor Zaragoza, 2005, p. 1). In fact, we believe that it is of utmost importance and quite urgent to train "people capable of understanding a global and changing reality (...), aware of their importance and their role in promoting local and global sustainability" (Sá, 2007, p. 186). Therefore, people will be prepared to deal positively with diversities and changes, so that present-day pupils foster development which "meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 43).

The concept of sustainable development has emerged within the scope of the evolution regarding public policy on the environment, i.e., in view of concerns about the depletion of the planet's resources, aggravated by the difficulty in sustaining the high levels of consumption and production of industrialized societies (Sá, 2007). Hence, it can be defined as "a dynamic and involving concept with many dimensions and interpretations and reflects locally relevant and culturally appropriate visions" (United Nations Educational, Scientific and Cultural Organization, 2005, p. 8). Sá (2007) sees it as the development of interpersonal relationships between people and the environment. Therefore, "it is mainly about values, with special attention to respect for others, the environment and the resources of the planet which we inhabit" (Sá, 2007, p. 36). The concept also involves "developing personal capacities for analysis, evaluation, creativity, communication, cooperation, as well as strengthening the motivation and courage necessary for the effective implementation of change" (Sá, 2007, p. 36). Moreover, sustainable development caters for a quest towards "homeostasis between quality of life and the quality of the environment in which we live, with a concern for the essentials, that is, with the construction of a better world, because it is fairer and provides more well-being at different levels." (Andrade & Sá, 2012, p. 90).

UNESCO (2005) states that the concept can be better understood by focusing on its three main domains, namely "Society, Environment and Economics", which are "interconnected, through the dimension of culture, a characteristic of sustainable development which we must always bear in mind" (UNESCO, 2005, p. 15). The first domain is mainly related to the democratic and participatory activity undertaken by citizens and the opportunity that both local and transnational governments give them in order to express their opinion, seek consensus, and resolve conflicts. The second domain, Environment, is related to the awareness of the resources we have, the fragility of the physical environment and the effects which human activities and decisions have on our planet. The Economics domain draws our attention to the necessary "sensitivity to

⁷ For further details, please have a look at: <u>https://classdojo.com</u>

⁸ For further details, please have a look at: <u>https://edmodo.com</u>

⁹ Some of the citations (either in Spanish or Portuguese) have been translated by us into English.

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the limits and potential of economic growth and their impact on society and on the environment, with a commitment to assess personal and societal levels of consumption (...)" (UNESCO, 2005, p. 14). In 2015, the United Nations created the "2030 Agenda for Sustainable Development" (European Commission, 2015), i.e., a set of 17 objectives which reinforce the importance of education in the endeavour to change the world into a better place, namely:

- Goal 1. End poverty in all its forms everywhere
- Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- Goal 3. Ensure healthy lives and promote well-being for all at all ages
- Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- Goal 5. Achieve gender equality and empower all women and girls
- Goal 6. Ensure availability and sustainable management of water and sanitation for all
- Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all
- Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- Goal 10. Reduce inequality within and among countries
- Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable
- Goal 12. Ensure sustainable consumption and production patterns
- Goal 13. Take urgent action to combat climate change and its impacts*
- Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Goal 17. Strengthen the means of implementation.

As seen by UNESCO (2005), education plays a very important role towards the promotion of a global and sustainable development, by which "everyone has the opportunity to (...) learn the values, behavior and lifestyles required for a sustainable future and for positive societal transformation" (p. 26). As stated by Batista and Andrade (2018), "education must be concerned with the exercise of global citizenship, based on the identification of global problems and the attempt to find solutions to those same problems" (p. 103). This fits the CLIL4U project and its aims.

As stated before, the global and sustainable development shall be fostered bearing in mind culture and the promotion of approaches which cater for plurilingual and intercultural skills (Byram et al., 2002; Byram et al., 2013), as this promotes respect and tolerance towards diversity, and at the same time encourages "a sense for global citizenship" (Cruz, 2011, p. 22). In fact, as Sá & Andrade (2008) argue,

plurilingualism, translated into the ability to interact with other cultures and communicate in other languages, brings subjects new forms of socialization, preparing them to face the challenges of modern societies, globalization, contact between cultures, challenges that require an education for sustainable development. (p. 122)

Nowadays, pupils must be engaged in activities which cater for the learning of lifelong essential skills and pro-active citizenship in our glocal present-day society. Indeed, as referred by the OCDE, "education needs to aim to do more than prepare young people for the world of work; it needs to equip students with the skills they need to become active, responsible and engaged citizens" (Organization for Economic Co-operation and Development, 2018, p. 4). If we focus our attention on Figure 1, in which we find the main skills needed for our glocal society which were defined by *Partnership for 21st Century Learning*, (Battelle for Kids, 2010), one can find that *critical thinking, communication, collaboration* and *creativity* are acknowledged as the main skills which are required to survive "a more and more complex life and work environments in the 21st century" (Battelle for Kids, 2015).



Figure 1: P21 Framework (P21, 2019, p. 2)

This can be achieved by fostering the training of creactical skills, i.e., critical thinking and creativity into action (Cruz, 2019; Ohler, 2013) within primary school contexts as early as possible, by carrying out an approach which encourages project-based and hands-on learning in a playful, collaborative and challenging environment, in which there is time to think critically and creatively. Moreover, skills as the ones we find in Figure 2, especially critical thinking, creativity, communication, collaboration, leadership, social and cultural awareness, can be trained by "providing a child with the autonomy to create something on his or her own" (World Economic Forum, 2016, p. 8) or "allowing students to have ownership and control over the process of creating and producing an innovative idea" (p. 9).



Figure 2: Social and emotional skills and to teach them (World Economic Forum, 2016)

Within the scope of this teaching and learning process, teachers are seen as agents which foster pupils' empowerment, by:

- a. engaging them in activities which imply thinking globally in order to find solutions to problems they encounter in society;
- b. promoting collaborative work with the Other in an intercultural dialogue that seeks to create consensus;
- c. involving pupils in the creation of original products and/or artifacts, which act as possible paths to overcome issues.

In this way, pupils would be able to undertake hyper sensory activities, based on a multisensory approach and on realia or present-day resources, which allow them to better "understand how society is organised and evolves, as well as decoding the challenges of our times that are not linear, simple or unidimensional" (Sá, 2007, p. 38). Later on, they are able to "act on society, to decide, to participate actively and responsibly on world problems, with the awareness that it is possible to change the society in which we live" (Martín-Díaz, 2002, p. 58).

The idea is to foster citizens, who are conscious of the world they make part of and understand their role as agents of transformation and intervention (Jiménez Raya et al, 2007). Within this approach, teachers aim "to empower citizens with the knowledge, skills and attitudes of commitment necessary to achieve the necessary changes in our habits and behaviours towards Planet Earth and towards Others" (Sá, 2007, p. 45). In this way, pupils, as future citizens, will be aware of "human rights, fundamental freedoms, peace and respect for others, human solidarity, equitable development, equal opportunities, the preservation of the ecosystem and, above all, the awareness of our individual responsibility in mitigating problems" (Sá, 2007, p. 45).

Bearing in mind that the CLIL approach may help foster 21st century skills, including both creativity and critical thinking, in the primary school classroom, we will now focus on the research methodology and data collection tools we used within this action-research study. In fact, it was our aim to start analysing the representations pupils, teachers, and parents had of the CLIL4U project and its contributions towards the development of the creactical skills. At the same time, we also analysed documents (lesson plans, projects, etc.) which portray strategies and resources which may have contributed towards these skills.

Research Methodological Approach and Data Collection Tools

Within the scope of this action-research study, we used a mixed-method approach, i.e., both quantitative and qualitative data were analysed (Barkaoui, 2010). Having been described as a participatory and democratic form of research that, in terms of method, is defined by a reflective spiral of cycles of planning, action, observation, and reflection (Gonçalves, 2011), action research methodology is a "complex process which requires active in-practice research, with the purpose of improving upon that practice" (Fernandes, 2018, p. 43), fostering its strategies and resources, as well as the eco-behavioural relations that occur within the classroom walls.

Regarding the nature of our study, we would like to highlight that our object of analysis focuses on the implementation of the CLIL4U project and the fostering of "creactical" skills and a global sustainable awareness within a primary learning setting.

We believe that our study could have resulted in a multiplicity of analysis possibilities. Therefore, it is necessary to take into account the following aspects regarding the process in which the data collection took place, in order to explain some obstacles and constraints we had to overcome:

- a. we followed two approaches regarding the analysis of representations of languages and their cultures: one more oriented to the so-called social psychology, whose main objective is to find the central and peripheral nucleus of the representations, describing them as something static; and another one more oriented to sociolinguistics, and related to the processes of construction and diffusion of representations in and by the discourses created by the pupils (Moore, 2001);
- b. our initial objective was to collect data with a focus on the second type of representations, however the constraints related to the video recording of practices prevented us from doing so;
- c. the very nature of our action-research project, which depended on the development of activities by pupils, exerted pressure on themselves by the existence of human supervision, albeit barely visible, by either the teacher as a moderator, or on the part of the supervisors present in the moments of project work, by the orientation of the activities themselves, suggestions in the choice of themes and productions created, in general.

However, in order to better organise ourselves, we chose to narrow down the possibilities of analysis to the issues raised by us, i.e., we tried to carry out an analysis taking into account, on the one hand, the representations that the pupils, their teachers and their guardians have of the project's overall implementation and the fostering of "creactical" skills, and on the other hand, the presence of evidences on the use of strategies which foster these skills.

Taking all this into consideration, the adopted research techniques and data-collection instruments served the purpose of our study, in which we opted for a triangulation of data and on the analysis of both documents and representations. Due to the complexity of our study, we used different data collection tools, namely: a)

questionnaires related to the implementation of the project (applied to pupils, teachers and parents) in which we followed a quantitative methodological approach; b) lesson plans conceived by the specialist and generalist teachers, pictures of practices and resources, and supervision reports/notes from the observed practices in which we followed a qualitative approach by developing a documentary analysis.

The lesson plans and the collection of pictures and videos allowed us to revisit and present the interventions by comparing what was planned and the intentions with our perception of what really happened and was achieved in practice. These was articulated with notes that were taken by the supervisors of the project.

The questionnaires were created taking into account the theoretical framework which we presented in the previous sections, namely, CLIL assumptions (Coyle et al., 2010; Ellison, 2014, 2015, 2019), critical pedagogy framework (Jiménez Raya et al., 2007; Ohler, 2013) and sustainable development aims (Andrade, & Sá, 2012; United Nations, 2015).

The questionnaire for children¹⁰ entails two sections. One related to biographical details, including the languages they speak. Another one related to the way lessons were undertaken within the scope of the CLIL4U project, which includes a section with a Likert scale and some open-ended questions. Language complexity and type of questions were adapted properly to children (Christensen & James, 2017). These questionnaires were applied to children attending all the four grades in the private school, but a pilot version was applied to a small group of pupils (3), in order to determine whether language had been properly adjusted. The link with the questionnaire was sent to all children at the end of the lessons and they had a week to answer them (during the last week in June 2020).

In relation to the other questionnaires, aimed at teachers¹¹ and parents/guardians¹², they also entailed two sections: one related to bio and professional data and another one related to the monitoring of the project itself, in relation to strategies and resources, and also to children's reactions towards the learning process, through open-ended questions and close ones (with a Likert scale). After inviting two teachers and four guardians to participate in a pilot and testing stage of the implementation of the questionnaires, these were applied to teachers (both specialist and generalist ones) participating in the project and all the guardians who had children attending one of the grades, in which the project had been implemented. As with the children's questionnaires, the links were sent to the teachers and guardians at the end of June 2020, and they had a week to fill them out.

Respecting the ethical principles of the investigation, all responses were treated as confidential and anonymous, so the data collected was only used for scientific purposes, and personal information from participants (such as name) was not requested and/or revealed¹³.

Focusing on the participants of this study, we would like to mention the following:

- a. Forty one pupils answered the questionnaires. They were all Portuguese and their age range from 7 to 9 years old and the majority were girls (51.2%); 41.5% were in the first school year, 17.1% the second and 41.5% the third. All of them spoke Portuguese as their native language and two of the respondents also spoke Spanish.
- b. As far as the teachers were concerned, the majority were women (75%) and 50% of them were 31 to 40 years old.12.5% less than 30 and 37.5% from 41 to 50. As to training, 62.5% of the teachers had degrees in Primary English Teaching and a specialization course/post-graduation degree; 25% had a MA degree. Most (70%) were quite experienced teachers as they had over 20 years of teaching experience.
- c. The majority of the guardians were female (79.5%) and were either the father or the mother of the child (97.3%). The majority were Portuguese (95-9%), but three of the parents had other nationalities (one of each British, Angolan, Brazilian) and spoke other languages as their native language (two Spanish and one French). As to their educational experience, 64% had a graduate degree, 13.7% a postgraduate /specialization course or a MA degree (19.2%). Their jobs are quite diverse, ranging from education (childhood educator, teacher, university professor) to economics or health-related jobs.

Regarding open-question data, we would like to highlight that we used the following coding: T for teacher, P for pupil and G for guardian. Therefore, in order to make the analysis of the data easier we used these codes together with numbers (in order to identify the teacher and the pupil and maintain his/her identity

¹⁰ This questionnaire aimed at children can be accessed here: <u>https://forms.gle/Nv3h9rujgVpBMhLK7</u>

¹¹ The questionnaire aimed at teachers can be found here: <u>https://forms.gle/s3RwP3HoebC8AH187</u>

¹² The questionnaire aimed at parents/guardians can be found here: <u>https://forms.gle/Eb82kLMzvTuqMN2g9</u>

¹³ For further information on this, please have a look at the regulation here: <u>https://www.privacyshield.gov/servlet/servlet.FileDown-load?file=015t00000000Jdg</u>

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undisclosed), as in the following examples: "I believe teachers should focus more on changing their teaching strategies" (T7) and "I did not like to present in front of everyone" (P8).

Taking into account the documentary analysis, two researchers/supervisors visited the school and observed practices on both May 23, 2019 and November 29, 2019. During these two days they collected six lesson plans conceived by the specialist and generalist teachers from three different grades and took 55 pictures of practices and resources, including projects undertaken by the pupils. Within our documentary analysis we also considered the supervision reports/notes from the observed practices which were collected.

The Fostering of "Creactical" Skills through CLIL Approach: Results Analysis

As stated before, children had the chance to develop the so-called creactical skills during the implementation of the CLIL4U project. In this paper, we both considered the pupils, teachers and parents' representations on the development of these skills, which they shared through the questionnaires, and the data we collected through the observation of some lessons and analysis of some documents, namely: lesson plans, notes, pictures, videos, projects, etc.

<u>Representations of the pupils, teachers and parents on the development of "creactical" skills in the scope of CLIL4U project</u>

This section starts with the analysis of the data we collected with the application of the questionnaires.

Focusing on pupils' answers in their participation in the project, as we can observe in Graph 1, they reported their lessons were fun, probably due to playful activities they had the chance to participate in. If we focus on the aspects related to skills, such as, critical thinking, communication, collaboration, and problem-solving, the majority either agreed or totally agreed that they had the chance to develop these skills.



Graph 1: Representations of the pupils on the project's implementation

The majority of pupils also showed a great deal of interest towards foreign language learning other than English, namely French, Spanish, Italian and Chinese. However, they understood the need to have lessons in a balanced approach: either in Portuguese or English.

When asked about the aspects they liked the most about lessons, they shared the following: "I loved projects" (P1), "What I loved the most were the games we played!" (P2), "I enjoyed a lot the task in which we had the chance to learn farm and zoo animals and the names of city places, and then we had the chance to

build a true city!" (P4), "I loved the books the teacher brought to the lesson!" (P8), "I liked the quizzes!" (P11), among others. Focusing on the aspects they did not enjoy about lessons, children uttered the following: "I hated online lessons as I was not with my friends!"¹⁴ (P4), "I hated online math lessons!"(P8), "I did not like to memorise new words in English" (P10), "Sometimes I did not understand everything said in English" (P14), "I don't like to present and use English language in front of others!" (P18), "I hated the tests" (P22), "I would like to get rid of tests. Please, teacher do this!" (P23). Regarding all these answers, we may say that pupils preferred lessons in which they had the chance to be both engaged and challenged, by avoiding tests or memorising activities which may not foster the creactical skills. Indeed, they preferred activities which involved project work, storytelling, and gamification.

Half of the teachers stated having needs regarding CLIL methodology as they consider that they "have to be updated, above all in these hard times we are living with the COVID-19 pandemic" (T1). Throughout the implementation of the project, both generalist and specialist (language) teachers worked hand-in-hand, by changing opinions, undertaking project work together, either sharing or creating resources and planning lessons according to topics which are significant to students and in accordance with the development of 21st Century Skills (Cruz & Orange, 2016). Focusing on the approaches and strategies they chose during their lessons, the most frequent ones were the following: task-based learning, project-based learning, gamified activities and storytelling activities (cf. Coyle et al., 2010; Elllison, 2014, 2015, 2019; Marsh, 2002; Mehisto et al., 2008). Regarding the teachers' global perceptions on the project's implementation, as we can observe in Graph 2, most aspects were present throughout the three years. In fact, teachers agreed that the topics had been significant to children and most times they had been motivated and quite active while learning through authentic resources. Most topics had been taught taking into account the integration and contribution of other subjects, which were fostered through cooperative work developed by teachers (both generalists and specialists), as defended by Ellison (2019).

- \checkmark Present aspect whenever relevant
- ? Present aspect, but that could have been more evident
- X Absent aspect, but that could have been present
- N Aspect not present in any of the classes



21st century skills, such as, collaboration, critical thinking, creativity, plurilingual and intercultural awareness, and communication were stimulated under the scope of the CLIL4U project. However, there are still

¹⁴ These questionnaires were implemented after the quarantine period implemented due to the pandemic condition we all lived this year.

aspects they consider which should be more evident and present, namely: scaffolding, reflection upon practices, and formative assessment. As we saw before, these are of utmost importance for the proper implementation of a CLIL approach (cf. Ellison, 2019; Jiménez Raya et al., 2007).

Focusing on the guardians' answers, we had quite a high percentage of respondents. We had 73 fully submitted questionnaires. In Graph 3, we can observe some of the answers parents gave in relation to the implementation of the project. Most parents agreed that their children had the chance to develop skills as critical thinking, problem-solving, communication, plurilingual and intercultural awareness, and collaboration. However, some of them considered that both the leadership and creativity skills should have been further developed. They also showed that they considered that the teachers should improve the methodologies and strategies in order to promote a true bilingual teaching process. The same thing occurred with the school spaces as they considered that they should have been more plurilingual.



Graph 3: Representations of parents on the project's implementation

Most felt that the percentage of teaching hours in English should have been higher and that some other foreign languages should have been offered, apart from the fact most considered that the project was taught in a balanced way (both in Portuguese and English).

By analysing the data collected from open-ended questions, we found that the majority (91.8%) did not struggle to provide support at home to their child in the domains taught in English. The ones that showed some difficulties shared that they had problems while translating and dealing with verbs, mainly because they did not know the English language. Regarding the main advantages they saw in the implementation of the CLIL4U project, most parents highlighted the following: the development of knowledge of Anglo-Saxon culture and other cultures; the interesting and motivating activities which children had the chance to participate in; the comparison between the native language, Portuguese, and the English language. The majority could not find disadvantages in the project's implementation, but they shared some things they would love to see improved, namely: there should exist more hours of English instruction; the need to learn other languages apart from English; the lack of content in English related to Maths and other Sciences; the need for improvement in the teachers' language skills. Taking all this into consideration, the majority (77.9%) would recommend this project to other parents, as they considered "the dynamics of the project and its strategies are of utmost importance for our children's proper development" (G3). The majority (74%) also consider that this project should be extended to all public and private schools in the country, above all the public ones as they notice "that the children do not get properly prepared in English language" (G5). Con-

sidering some suggestions for the future implementation of the project, some parents shared that the lessons should be more dynamic and that the teachers needed to use more strategies to support pupil's participation and interaction during the lessons.

Taking into account all the data we analysed, we would like to highlight that within the scope of the CLIL4U project, pupils felt motivated and had the chance to develop 21st Century Skills, namely critical thinking, collaboration, and plurilingual and intercultural skills. In the next section, we will focus on practices and resources conceived by the teachers and f on the work undertaken regarding some other skills, namely: creativity and the sustainable development skills.

Examples of practices and resources which foster the development of creactical skills

Taking into account the planned follow-up supervision activities within the scope of the CLIL 4 U monitoring stage, a visit was made to Colégio do Sardão on May 23, 2019 and November 29, 2019, with the objective of observing teaching practices and collecting evidence regarding the fostering of creactical skills. Within our analysis we selected three examples from the group of previously-mentioned practices (six lessons), as these were the ones which directly mentioned the fostering of creactical skills. Therefore, in this section we examine the lesson plans, pictures, and reports/notes related to these three examples.

The analysis of the report yielded the following prominent findings:

- a. the proactive attitude of most teachers (attention to student participation, circulation through the classroom, instantaneous assessment of practices, role play strategies, etc.) facilitated communication and dialogue in the classroom (cf. Cruz, 2019);
- b. the ecosystem management of the classroom, including the distribution of students by groups and the constant monitoring of their work, fostered collaborative work (cf. Canha, 2013);
- c. the choice of authentic materials (songs, videos and picture books) was suitable for promoting work related to 21st century skills, namely critical thinking, and the areas of skills provided by the documents we presented in the theoretical part of this article, namely with regard to the proficient use of different languages and texts and the development of artistic aesthetic sensitivity (Duarte & Cruz, 2017);
- d. the design methodology observed in both sessions was appropriate to the CLIL approach, as it caters for a learning type based on dialogue and negotiation of knowledge, either in pupil's mother tongue or in English.

However, the reports also showed some recommendations. In fact, the supervisors considered that the lesson plans, which the teachers prepared, did not present a description of the lesson steps in order to be implemented, as they only included a summary of possible strategies and resources. Although the majority of the teachers presented a proactive posture in the classroom, there were those who chose to teach seated. These opted to not circulate in the classroom, and they did not promote group work.

First, the supervisors recommended the investment in the (re)creation of the lesson plans, which must be built according to the pillars of the CLIL approach and present a more detailed description of the activities to be developed. Second, some teachers should rethink the teaching and learning process in the light of approaches based on a project methodology in which practices may focus on the exploration of a picture book or a problem content from different subject areas. Third, the supervisors also stressed that it is quite urgent to create moments of sharing and peer supervision between teachers of the same level/year, which would culminate in situations of joint reflection, in the sense of rebuilding their teaching professionalism, to avoid passive postures of some teachers in the classroom, which, in some cases, still occur.

Focusing on examples of teaching practices, we would like to highlight strategies which seem to have fostered pupils' creatical skills. The first one is called "Measure it!" (implemented in the 3rd grade). This activity, which was created by the 3rd grade teachers (both generalist and specialist teachers), followed a true interdisciplinary (see Figure 3, for further details) and a playful project-work methodology. This teaching practice was observed on May 23, 2019.

Following a gamification approach, the pupils had the chance to work on the "measures" topic by participating in a treasure hunt¹⁵. By making use of the schools' garden and farm and taking into account a route plan¹⁶, pupils had the chance to collaboratively undertake tasks which involved the measuring of nature items, for example the diameter of a tree (Figure 4). This was a truly gamified activity as pupils joined groups who had to finish all problem-solving tasks in the stations before others. After having solved all problems correctly, pupils would find out a hidden token who would make them "the ultimate forest knowers

¹⁵ For further explanation, have a look at this website: <u>https://en.wikipedia.org/wiki/Paper_Chase_(game)</u>

¹⁶ Please, have a look at this route plan here: <u>https://app.box.com/s/42i8hwpcca01cjj70y5natg3crgrmu4d</u>

and protectors". With these kinds of activities pupils have the chance to foster their global sustainable awareness, by valuing nature and the things it has to offer to humankind (Sá, 2008; Sá & Andrade, 2007).



Figure 3: Interdisciplinary approach on "Measure it!" lesson plan (adapted from the lesson plan created by the teachers)

This is just one of the activities developed under the scope of a project in which children had the chance to recognise and value nature, by studying it, undertaking some mini recycling projects with their parents at home and, finally, creating a farm which is eco-friendly together with their teachers and peers. As we can observe from Figures 4 and 5, children had the opportunity to develop collaborative work and to engage in activities which are problem-solving tasks, and therefore had to critically reflect upon some challenges they had to scrutinise in order to overcome them.



Figure 4: Children measuring the diameter of a tree bench



Figure 5: Children measuring the length of a plantation spot

Another activity we would like to focus on, which was observed on November 29, 2019, is related to the use of a picture book in a 2nd grade group. "Handa's Surprise" tells the story of a Kenyan girl who is part of the Luo tribe and deals with the topic "Fruits" and "Animals". In fact, Handa is collecting some fruits to take to her friend Akeyo and some sneaky animals try to steal fruit from the basket she is carrying.

As we can observe in Figure 6, the children had the chance to participate in the storytelling activity by asking and answering questions, guessing, finding Kenya on a map, describing the main characters, etc. This is the type of activities that stimulate pupil's cultural critical awareness and foster the development of their plurilingual skills. In fact, they had the chance to compare the Portuguese culture and the target one, and apart from having contact with the English language, they also learned a few words in Bantu Swahili, reflecting upon the importance of linguistic diversity in our world and the need for its maintenance. Within this lesson, pupils had the chance to continue on expanding their picture dictionaries in English, based on book reading and/or lectured contents, which were worked on in the classroom, allowing them to become aware of the knowledge acquired, its layout and a possible transfer of them to other disciplinary areas, when required. According to the supervisors' reports, dramatization and the storytelling approach, with the use of scaffolding, proved to be fruitful practices for creating an atmosphere of contemplation, exploration and reflection with regard to the development of the students' critical cultural awareness (Mourão, 2016).



Figure 6: Children participating in a storytelling activity



Figure 7: Posters about the international cheeses

The last activity we would like to address was also observed on November 29, 2019 and is related to another topic. This activity was developed under the scope of a European Erasmus+ Project which focuses on gastronomy traditions. In this case, pupils from the 4th grade engaged in videoconferencing with their peers in Paris and Genova and created posters (Figure 7) about what they had learned, organised a cheese tasting workshop (Figure 8), and later on created their own cheese recipe (Figure 9) with milk they extracted directly from the goats they have in the farms.



Figure 8: Resources used in the cheese tasting workshop



Figure 9: Children writing a cheese recipe

These examples also show that a true education based on the training of a proactive citizenship has been promoted, through which pupils participated in activities which involved the fostering of not only cognitive skills, but also social and emotional ones (Organization for Economic Co-operation and Development, 2018; World Economic Forum, 2016). Moreover, as one can see in the supervisors' notes the concern with which the systematisation of the procedures developed and the learning carried out contributed to the pupils' awareness of their own progress, both from a linguistic point of view as well as in terms of knowledge in other curricular areas. In fact, this pedagogy, which favours autonomous learning skills, may help pupils engage themselves in endeavours which aim at training them as future citizens within our global and intercultural society.

Conclusions, pedagogical implications, and limitations

In this paper, we proposed to study the possibility of fostering creactical skills (Ohler, 2013; Cruz, 2019) in a private primary school, which follows a CLIL approach, and how this could be achieved in practice. Within this study, we took into account the intrinsic relationship between these competences and their growing

importance in favouring the sustainable development of students (UNESCO, 2005; Sá, 2007; Sá & Andrade, 2008) and helping them to cope with today's challenges.

Focusing back on our research questions, 1) Which representations do pupils, teachers and parents of the CLIL4U project in regard of the development of lifelong skills, namely the "creactical" skills? and 2) Which practices and resources foster the development of a global sustainable awareness within the context of primary learning? We will now try to answer them by reflecting upon our findings and their analysis.

Regarding the first question, children highlighted the playful and engaging environment in the classroom. They agreed on having developed skills, such as critical thinking, communication, collaboration, problemsolving, etc. This was most a result of the project-based, task-based and gamified approached implemented by the teachers. Most parents also considered their children had the opportunity to develop skills such as critical thinking, problem-solving, communication, intercultural awareness, and collaboration, but some thought both the leadership and creativity skills should have been further fostered. This has probably to do with the fact that some teachers need to improve the methodologies and strategies used in order to promote a true bilingual teaching process, namely scaffolding and reflective practices.

Taking into account the second question, by having developed a documental analysis (lesson plans, supervision reports/notes, pictures, videos, projects), we can infer that strategies which involve a playful, interdisciplinary and project work approach and the use of authentic and cultural-rich resources may foster the 21st century skills and a conscious and pro-active citizenship. This seems to us evident, for example, in the lessons we presented, for example in the case of "Measure it" unit, which have these skills in their early development, implying that pupils are citizens of the world and are capable of overcoming challenges and unravel clues that they may come across in their daily lives.

Bearing in mind the above, we consider that this action-research study has the following limitations: the practices implemented and subsequently analysed were linked to a specific context and markedly different at the socio-cultural and socio-economic level, so the applicability of these to other types of realities may result differently; the learners did not develop skills in the same way, as this always depends on the interests and motivations of the pupils themselves, who may prefer this or that topic and/or strategy. However, essential steps have been taken to develop their "creactical" skills and a global sustainable awareness.

Future research projects could focus on the course books and the proposals they entail regarding the development of creactical skills. In Portugal and other European countries, one feels that these resources still influence the way teachers implement their practices and sometimes even inhibit them to promote more active and engaging strategies based on the pupils' true needs and interests (Vasconcelos, 2012).

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