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The maker culture and the CEFR: an action-research articulating these concepts

A cultura *maker* e o CEFR: uma pesquisa-ação articulatória entre esses conceitos

La cultura *maker* y el CEFR: investigación-acción que articula estos conceptos

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Abstract

The present text exposes the analysis of an action-research carried out throughout the year of 2022, which resulted in the production of a travel website in English that is part of a dissertation defended in the master's program in basic education (PPGEB) of Uniarp, from Caçador-SC, Brazil. In addition, it intends to establish some common points between the maker culture and the Action-oriented Approach- AoA. Maker culture combines the use of technological resources with education to create educational products and the idea of "making together". The AoA, adopted by the CEFR, proclaims that "[...] learning a language should be directed towards enabling the student to act, in real everyday situations, expressing himself and performing tasks of different natures" (Council of Europe, 2020, p. 29). In the classroom, implementing the AoA means involving the student in the learning process, placing education between the social and the individual through collaborative interaction in the classroom (Council of Europe 2020). Based on the results obtained during the research, associated with the theoretical basis of the maker culture and the CEFR, this article aims to articulate these points and open paths for a transformation in the classroom, in which the true protagonists are the students themselves.

Keywords: Maker culture, CEFR, Action-oriented approach, English language, BNCC.

Resumo

O presente texto expõe a análise de uma pesquisa-ação realizada ao longo do ano de 2022, que resultou na produção de um site de viagens em inglês que faz parte de uma dissertação defendida no programa de mestrado em educação básica (PPGEB) da Uniarp, de Caçador-SC, Brasil. Além disso, pretende estabelecer alguns pontos comuns entre a cultura *maker* e a Abordagem Orientada à Ação – AoA. A cultura *maker* combina o uso de recursos tecnológicos com a educação para criar produtos educacionais e a ideia de "fazer juntos". O AoA, adotado pelo CEFR, proclama que "[...] a aprendizagem de uma língua deve ser orientada no sentido de permitir ao aluno atuar, em situações reais do cotidiano, expressando-se e realizando tarefas de diferentes naturezas" (Council of Europe, 2020, p. 29). Na sala de aula, implementar o AoA significa envolver o aluno no processo de aprendizagem, colocando a educação entre o social e o individual através da interação colaborativa na sala de aula (Council of Europe, 2020). Com base nos resultados obtidos durante a pesquisa, associados à

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base teórica da cultura *maker* e do CEFR, este artigo visa articular esses pontos e abrir caminhos para uma transformação na sala de aula, em que os verdadeiros protagonistas sejam os próprios alunos.

Palavras-chave: Cultura *Maker*, CEFR, Abordagem Orientada à Ação, Língua inglesa, BNCC.

Resumen

Este texto presenta el análisis de una investigación acción realizada a lo largo del año 2022, que resultó en la producción de un sitio web de viajes en inglés que forma parte de una disertación defendida en el programa de maestría en educación básica (PPGEB) de la Uniarp, de Caçador- SC, Brasil. Además, pretende establecer algunos puntos comunes entre la cultura *maker* y el Enfoque Orientado a la Acción – EoA. La cultura *maker* combina el uso de recursos tecnológicos con la educación para crear productos educativos y la idea de "hacer juntos". El EoA, adoptado por el CFER, proclama que "[...] el aprendizaje de una lengua debe estar orientado a permitir al estudiante actuar, en situaciones reales cotidianas, expresándose y realizando tareas de diferente naturaleza" (Consejo de Europa, 2020, p. 29). En el aula, implementar, EoA significa involucrar al estudiante en el proceso de aprendizaje, ubicando la educación entre lo social y lo individual a través de la interacción colaborativa en el aula (Consejo de Europa, 2020). A partir de los resultados obtenidos durante la investigación, asociados a los fundamentos teóricos de la cultura *maker* y el CFER, este artículo pretende articular estos puntos y abrir caminos para una transformación en el aula, en la que los verdaderos protagonistas sean los propios estudiantes.

Palabras clave: Cultura *Maker*, CFER, Enfoque Orientado a la Acción, idioma inglés, BNCC.

Introduction

Learning a language faces constant debates, and each group ends up defending methodologies, approaches, and practices to involve students in this process. However, studies carried out by Cambridge English Language Assessment describe an estimate regarding time required for exposure and use of the language to reach levels of proficiency considered reasonable (Cambridge University Press, 2013). Thus, it can be said that it is necessary to use the language, be in contact with it, and perform tasks that involve writing, reading, speaking, and listening to learn it. On the other hand, there is an increasing use of technology, through cell phones, tablets, and computers by students for various purposes and the English language itself, is often used, to carry out numerous activities such as recording videos, chatting through apps or playing games.

The maker culture is the act of putting "hands-on action, associated with the use of technological resources [...] where the student has autonomy to create, modify or transform

objects, being the main protagonist of his learning" (Paula et al., 2021, p. 2). And, with the use of technology increasingly present in the reality of many students, the school context can benefit from this fact through the maker culture with the collaboration of language learning.

Regarding language learning, the Common European Framework of Reference (CEFR) presents an approach to language teaching called the Action-oriented approach (AoA). The action-oriented approach tasks can involve "creating a product" and can also describe the use of the language in social contexts. In the classroom, implementing the AoA means involving the student in the learning process, placing education between the social and the individual through collaborative interaction in the classroom (Council of Europe, 2020). When talking to someone, watching a movie, making an online purchase, among many other tasks, the student is using the language as a form of interaction and mediation in society (Council of Europe, 2020).

Involving the student in the use of technology to create a product and combine the English language as a second language with this learning was the proposal of an action research carried out in the year 2022 in a municipal school in Caçador-SC, Brazil. This action-research was part of the dissertation: "*Abordagem Adotada Pelo Quadro Comum Europeu de Referência para Línguas e a Base Nacional Comum Curricular para o Ensino de Língua Inglesa*", and is linked to the master's program in basic education at the Alto Vale do Rio do Peixe University (Uniarp), Caçador-SC, Brazil, defended in 2022.

Thus, the text that will be presented here shows some constituent elements of this dissertation and its correlation with the world of maker culture, which places students as protagonists of the teaching/learning process, as they collaborate with teachers in the construction of educational products able to reveal their own creative and proactive capacity in their learning path.

The space for learning and teaching

Traditionally, the primary setting for teaching and learning was the classroom, where the main tools utilized were the blackboard and chalk. The teacher played a central role as the knowledge transmitter in the teaching process, while the students were mainly passive recipients of knowledge. The use of books complemented this teaching style, serving as a resource for research purposes.

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With the popularization of computers, tablets, and smartphones connected to the internet, learning, and searching for subjects of the student's interest, or considered essential in education, began to be carried out more autonomously.

Thus, this article addresses the maker culture, which embraces the concept of "make it yourself" to collaborate with the learning process, combined with the use of technologies. In addition, the CEFR (Common European Framework of Reference for Languages) is presented, which has an approach to language teaching, focused on students' protagonism and action in society.

Incorporating these two concepts, this article reports an experience carried out with students in a municipal school in Caçador-SC, Brazil, in the creation of a website. This article also aims to contribute to a more interactive vision of teaching-learning within the context of this educational reality.

The maker culture

The maker culture or the culture of "making" involves the creation or the manufacture of something that may or may not include the use of technological resources and involves the student in collaborative work, through thinking and innovation (Yumi et al., 2017).

In their article, Martins et al. (2021), present a comparative framework of a computer lab and a maker space and emphasize the students' protagonism and the need for collaboration, in addition to the use of technology as a pedagogical support and not as an end.

Raabe and Gomes (2018) state that the "maker approach has great potential to enrich the training of young people in the direction of making them technology producers and not just consumers" (Raabe; Gomes, 2018, p. 7). They also point out the attention that should be given to the teaching approach, so that it can integrate knowledge.

Satomi and Perner-Wilson (2011) add that to consolidate the maker movement, "it is necessary to pay attention to three points: learning, community and exposure" (Satomi; Perner-Wilson, 2011 apud Yumi et al., 2017, p. 3). By relating these points to the learning of a language, we can associate the need for a learning process to create a product in the technological environment, such as a game, a video, or a website. If the students need to elaborate something in a foreign language, they need to study, practice, research, and experiment with appropriate linguistic skills until they can finalize a product.

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The community in relation to Satomi and Perner-Wilson (2011) apud Yumi et al (2017) is formed with the involvement of the group in the creation of the product as a team effort, where everyone can cooperate using his/her knowledge and mastered skills and abilities. The exhibition is the final phase of the activity, through sharing the product so that others can enjoy it.

The *Base Nacional Comum Curricular* (BNCC) a Brazilian document that mentions essential guidelines and knowledge that students should acquire, states that, "using information and communication technologies, among other experiences, enables students to broaden their understanding of themselves, the natural and social world, the relationships of human beings with each other and with nature" (BNCC, 2018, p. 60).

The BNCC considers the changes occurring in the learning process due to the presence of technologies and the engagement of students in their use. The technology, although usually associated with the immediacy of responses, according to the BNCC and aligned to Satomi and Perner-Wilson (2011) apud Yumi et al. (2017) and their concept of community and exposure indicates the countless possibilities of communication and interaction in the technological environment.

Using technology to create a product, which is developed by the students, is one of the characteristics of the maker culture. Raabe and Gomes express that the "maker movement in education enables students to think like inventors instead of being taught about inventions" (Raabe; Gomes, 2018, p. 8).

Raabe and Gomes (2018) also relate some common pedagogical practices to the maker culture. First, they quote curriculum flexibility. Since the students are the protagonists in the learning process some changes can occur during this process. For example, in the construction of a video, some ideas can appear during the process, changing the way they are presented. The teacher should be prepared to accept these changes, that is to be open to curriculum flexibility. Besides that, as the students are the protagonists in the construction of something, the contents could be incorporated over the students' progress in the projects, such as grammar points that must be learned in order to write better or some speaking skills, related to pronunciation, intonation that the students aren't familiar with to record a video. This is an important aspect of the flexibility, the autonomy of the students to choose the topics of interest and the teacher acting as a guide to help them with whatever is needed.

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Moreover, according to Raabe and Gomes (2018), related to curriculum flexibility, it is up to the teacher to "make the connections between school and scientific knowledge with the practices being carried out by students" (Raabe; Gomes, 2018, p. 16). The evaluation, according to the authors, is also completely different from the evaluation based on memorization.

The evaluation based on memorization has usually a limited repertory to be studied and can be based on grammar points or specific vocabulary, for example. On the other hand, the evaluation according to Raabe and Gomes is an assessment in which the student and the class are seen in an integral way. Autonomy, collaboration, effort, organization and how students register ideas are important points in the evaluation process. The teacher should consider all these aspects when evaluating the students.

Gavassa (2020, p. 40) complements these points, quoting the importance of "emphasizing that building something by itself, is not enough for learning". Gavassa (2020) exposes the need to incorporate a purpose into the construction of a product, so that the activity does not become merely a manual activity. Therefore, learning combined with cognitive aspects, such as learning vocabulary, grammar points, pronunciation, or developing writing skills when learning a second language, among others, must exist to characterize the maker culture.

Establishing a relationship between the importance of a purpose in the construction of a product by combining the maker culture with the use of technologies, the fifth general competency of the BNCC states that the students should learn how to "understand, use and create digital information and communication technologies in a critical, meaningful, reflective and ethical way in the various social practices (including school ones) to communicate, access and disseminate information, produce knowledge, solve problems and exercise protagonism and authorship in life personal and collective" (BNCC, 2018, p. 9).

Oliveira (2022) points out the importance of this general competence of the BNCC, mentioning the creation of podcasts and video editing as activities that can be developed by students. This kind of activity can be used in English as a second language classes at schools and serve as an impetus for students to develop not only written, but also oral production, which is often forgotten in the daily practice at school.

In view of this, the language teacher can incorporate these characteristics of the maker culture, taking advantage of the students' interest in a specific topic, combining the use of

language and technology, and placing the students as the protagonists of the learning process. In the end, students can enjoy their creation by sharing it through digital media.

The Action- oriented Approach (AoA) adopted by the CEFR.

The CEFR (2001) is an extensive document developed by the Council of Europe to guide language teaching, learning and assessment. When the initial document was prepared in 2001, the authors, first and foremost, sought to define the approach they would like to take to teaching a language. According to the document, "[...] learning should be directed towards enabling learners to act in real-life situations, expressing themselves and accomplishing tasks of different natures. Thus, the criterion suggested for assessment is communicative ability in real life, in relation to a continuum of ability" (Council of Europe, 2020, p. 29).

The CEFR describes actions that people perform as social agents, in which language is a fundamental part of the process. Watching a movie, making an online purchase, participating in a debate, acting as a mediator between people who speak different languages; these and many activities and strategies are presented in the document.

These activities and strategies are presented in frames that detail various actions mediated by language according to the level of proficiency at which a person is. The proficiency levels range from the pre-A1 level, through the A1, A2, B1, B2, C1 levels to the C2 level, the highest level. These descriptors are divided into reception activities such as listening to songs and understanding them; production, such as making a speech or writing an email; interaction, such as talking to someone; and mediation, such as creating conditions for two people who speak different languages, or find it difficult to communicate, to understand each other. These are just a few examples among many descriptors that the CEFR presents (Council of Europe, 2020).

In the classroom, when using the CEFR approach, the Action-oriented Approach (AoA), the teacher should seek to involve the student in the learning process so that he can interact with other students during the activities, using their knowledge while incorporating new insights to develop learning tasks (Council of Europe, 2020).

This approach may involve creating a product. The tasks proposed to the students require problem solving and decision making such as posting a blog, or developing a social project, among others. During this process, the students need to learn by making, and making

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mistakes and redoing is part of the process. The teacher should act as an encouragement and a guide in this course (Piccardo; North, 2019). “These techniques allow the students to work cooperatively, to take responsibility, to think and express their views freely, to choose their topics of study voluntarily, to design and implement their own works, to respect one another, to share their products collectively, all of which contribute to their personal development and educate them as democratic citizens (Acar, 2019, p. 127).

The document, Action-Oriented Approach Handbook (CASLT), developed by the Government of Canada, through the Canadian Association of Second Language Teachers, proposes some parameters that the teacher must observe when creating tasks in the context of the AoA. Aspects such as student interaction during the process and the application of the product in real situations of use are some of these parameters (CASLT, 2019).

In addition, the CEFR describes plurilingual and pluricultural competences. These skills recognize the language not as a system of signs to be decoded. Instead, they expose the relationship of the language with cultural aspects and the environment in which it is used and the knowledge that the person has in other languages (Council of Europe, 2020). When students develop plurilingual and pluricultural competences, the ability to use the language to communicate increases, and the AoA can relate to these aspects, since the AoA seeks to develop in the student the ability to use the language to perform a proposed task. Based on the knowledge they already have; students are encouraged to overcome their difficulties to accomplish another task. In addition to helping, it is up to the teacher to stimulate, provoke and challenge the students in this process (Piccardo, 2014).

However, more than that, the AoA fosters the development of the students’ skills in a global way, taking advantage of their potential so that, as a group, they can help as well as be helped with respect and dignity, insofar as they develop their autonomy, critical thinking, and cooperation. These attitudes that can be developed in the classroom as a language is taught, appear in the Guide for the Development and Implementation of Curricula for Plurilingual and Intercultural Education (Council of Europe, 2016).

Observing the skills that the maker culture seeks to develop and the skills that the AoA seeks to develop in the students, such as the ability to use the language to perform a proposed task, we notice some similarities. Developing the students’ autonomy, critical thinking, the association of ideas while developing a task in a group, is essential for the well-rounded development of the students as autonomous, social, and interactional beings.

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Methodology

During the year of 2022, a project was carried out with 9th grade students in the English language discipline at Pierina Santin Perret school. The work was part of an action-research for a dissertation entitled "*Abordagem Adotada pelo Quadro Comum Europeu de Referência para Línguas e a Base Nacional Comum Curricular para o Ensino de Língua Inglesa*" of the master's program in Basic Education at Uniarp, Santa Catarina, Brazil.

The purpose of this research was to present the CEFR and the AoA, and compare the approach adopted by the CEFR with the approach for the English language learning from BNCC - Base Nacional Comum Curricular, which is the official document that guides the learning and teaching process in schools in Brazil.

The school had two 9th grade classrooms. One 9th grade was chosen to carry out the project, and all the students from this class were invited to participate. Students have only 45 min. English class a week. At the end of middle school, in the 9th grade, most of the students have an A1 level proficiency of English.

The BNCC is the official document that guides the main points that students should learn at school. This document points out knowledge considered essential that is at a higher level of English proficiency. Being aware of the importance of adapting the activities to the students' proficiency level could help them work more autonomously.

The project started with the presentation of the Common European Framework of Reference for Languages (CEFR) and the Action-Oriented Approach, AoA. A comparison was made between the CEFR and the *Base Nacional Comum Curricular* related to the level of proficiency that is necessary to produce some of the activities suggested by the Brazilian document.

After the presentation about the CEFR, the AoA and the BNCC, an action-research was carried out. This action-research consisted of a project which had the cooperation from the students to build a travel website about the city where they lived – Caçador-SC. The project followed six steps to be completed.

The first step of the action-research involved an online questionnaire and included questions related to students' profiles and their preferences for a work proposal in the English classes. Several students showed interest in creating a travel website for the city of Caçador-SC.

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The second step of the action-research was the preparation of the lesson plans for the English classes, with the activity suggested by the students being: the creation of a website. During the entire process of the creation of the website, the students first needed to learn about aspects presented in a real travel website, reading texts and watching videos, and understanding them, before starting to develop their product- the travel website.

Because of the student's proficiency level, the students had to get help from each other and from the teacher to understand the video and the written texts from the travel website and to produce the written part of the website.

Simultaneously, the third and the fourth step of the action-research was carried out. After each lesson plan was prepared, it was implemented. Following the implementation, a script was filled out by the teacher with some perceptions regarding the tasks that have been performed, which listed the main intercurrences of the class in relation to the activities, the students' behavior, aspects such as autonomy, interaction, the use of knowledge by the students, and the use of the English language.

The fifth step of the action-research was carried out by the students. They filled out a form about their remarks related to the creation of the website, their difficulties, their impressions, and some remarks about the use of the English language.

The sixth and last step of the action- research was the final analysis of the data obtained from the research. The data collection was quantitative and qualitative. Through Google forms, the data obtained was quantitative, relative to the number of students who have the same opinions about a specific activity or subject, but since most of the questions were related to the student's perceptions about the activities the data has been analyzed qualitatively.

Results and discussion

In 2022 an action-research was carried out with 9th grade students at a municipal school in Caçador-SC, Brazil. The purpose of this action-research was to use an AoA for the English classes and collect information about the students and the teacher's perception of the English classes with this approach. The students, after an online questionnaire, chose to write a website about the city where they lived- Caçador-SC.

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The website construction lasted two months, and after the whole process of writing, choosing the photos and recording the audios for the website, the students could conclude their work.

For the analyses of the action-research, some data was collected through a questionnaire, addressed to the students, which consisted of ten questions, answered through google forms, individually by the students, with some of them related to the type of approach that was given to the work, such as team activities, cooperation, learning outside the discipline and the opportunity for the expression of knowledge by the student. The data was analyzed qualitatively and quantitatively. Although the data exposed some graphics with numbers, the answers were related to the student's opinions about the classes.

The first question was related to the students' perception regarding the theme (the construction of the website) in relation to their English learning. Most students perceived the theme and methodology of the class as very or somewhat helpful to express their knowledge (Lusa, 2022).

The second question was related to the student's perception about the activities proposed. It was asked if the activities contributed for the knowledge generation in English. Most of the students answered that the activities partially helped for the generation of knowledge in English. As exposed before, studies carried out by the Cambridge English Language Assessment describe an estimate regarding time required for exposure and use of the language to reach levels of proficiency considered reasonable (Cambridge University Press, 2013). The project had only two months to be completed, with four classes of 45 min a month. Because of that the English knowledge could not have a big development, though students could have a clearer perception of their limitations and difficulties.

The third question was related to the activities performed during the creation of the website. It was asked if the activities needed more knowledge in English than his/her knowledge. Most of the students agreed that the activities required more knowledge in English than his/her knowledge. "Students in the A1 or A2 level can produce simple isolated phases and sentences" (Council of Europe, 2020, p. 66), and for the writing of the travel website, a text had to be written.

The fourth question was related to the teacher's assistance during the production of the travel website. For the students, the teacher collaborated partially or totally to produce the

website. The collaboration was necessary, because of the students' English proficiency level (Lusa, 2022).

The fifth question was related to the methodology used. It was asked if the methodology helped with the learning process. 60% of the students had the perception that the methodology partially helped with the learning process. Almost 27% of the students had the perception that the methodology totally helped with the learning process, and 13% of the students had the perception that the methodology didn't help with the learning process (Lusa, 2022).

It was possible to notice that the majority had a clearer perception of their limitations, both in relation to the language and in relation to the use of technologies in the classroom for the creation of the travel website.

The sixth question was related to the opportunity to express their knowledge during the activities. More than 80% of the students had the perception that the activities gave them the opportunity to express their knowledge. Students who knew about London, Caçador-SC and were familiar with the use of technology to write texts and search for information and images could express their knowledge (Lusa, 2022).

The seventh question was related to the learning outside the discipline and awakening interest in subjects outside the discipline in the creation of the site. Most of the students answered that they could learn outside the discipline and awakened their interest in subjects outside the discipline. Regarding teamwork, only a few students believed that it did not facilitate learning. However, most felt a certain autonomy to carry out the activities (Lusa, 2022).

The eighth question was related to the methodology. It was asked if the methodology awakened the curiosity about unknown topics. More than 70% of the students agreed with that affirmation (Lusa, 2022).

The ninth question was about the student's perception about their autonomy during the production of the website. 60% of the students had the perception that they had a little autonomy during the production of the website. Because of the English proficiency level, many students needed help during the production of the website.

The last question was related to teamwork. It was asked if teamwork helped the learning process. 60% of the students had the perception that teamwork helped a lot during the learning process.

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Even though some difficulties have appeared during the whole process of the travel website creation, when faced with the product, in which each student had a small participation, they showed a certain pride.

The product can be checked through the following link: https://docs.google.com/document/d/1ILRi3LM4sePa2sn5TFTpvw2YPazkVOJQwGnHv9mEZe4/edit

Final considerations

Associating the use of technologies to create a product with the learning of a language is a method that can be used to help students increase their exposure time and contact with the language.

Regarding the creation of the website, the final purpose was achieved although some difficulties because of the proficiency level of the students had to be overcome. Some activities needed some adjustments, but with the help of the teacher and of the students that had a higher proficiency, they could be finished.

The students' proficiency differences in the English language were the biggest challenge. For the completion of the text in English many grammar issues could have been discussed, but it would take a lot of time that wasn't available due to the action-research's timetable.

It was noticed that when the students received a clear proposal to present a final product, they first needed to organize themselves and think about the steps that must be followed to conclude the product.

Using technologies, recording video, audio (like in a podcast), or creating sites on topics of interest, are examples of activities that can combine the use of technologies and the concepts of the maker culture with the learning of the English language.

Furthermore, for the recording of video and audio, an important part of this process is the verbal communication that needs to be incorporated by the students, which often does not happen in the classroom, due to the short time and the large number of students.

In addition, having a clear purpose for the class may end up reducing some complaints commonly shared in the English class, such as asking why they are learning a given subject.

Giving autonomy, the ability to choose subjects of interest, and challenging the students can be a motivating agent for learning.

Hands-on experience delivering a product also exposes students to their limitations and difficulties, but at the same time challenges students to overcome them so that they can share it with others. Teamwork seeks a balance between the different skills that students have as they learn to help fellow students and learn to accept to be helped.

Taking advantage of computer labs in schools and applying maker culture can be introduced to excite students to learn the English language.

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