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WEBQUEST AS A PBL TOOL IN A COIL EXPERIENCE

WEBQUEST COMO UMA FERRAMENTA PBL DENTRO DE UM EXPERIÊNCIA COIL

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ABSTRACT: *This paper presents a successful online experience recently taken place in a PCI (Collaborative Internacional Project), among 25 students from Yerevan State University, in Armenia, and 37 Brazilian students from 8 different Fatecs, assisted by Brazilian and Armenian professors. Armenian students acted like tutors to the Brazilian ones and, together, they found possible solutions for the challenge presented in the form of a WebQuest. PBL (Problem Based Learning) is the basis for the conduction of the work with WebQuests, tools of which were conceived inside Centro Paula Souza, as a research line in RJI (Integral Regime Journey) during the year of 2022 by students from Informatics and Agribusiness Courses at Fatec Rio Preto. This PCI was coordinated by Profs. Anoush Ayunts and Edilene Gasparini Fernandes.*

KEYWORDS: *International Collaborative Projects (PCI); Project Based Learning (PBL); Yerevan State University YSU; Fatecs.*

RESUMO: Este artigo apresenta uma experiência online recente que aconteceu como um PCI (Projeto Colaborativo Internacional) entre 25 alunos da Universidade Estadual de Yerevan, na Armênia, e 37 alunos brasileiros de 8 diferentes Fatecs, ajudados por professores brasileiros e armênios. Os estudantes armênios atuaram como tutores dos brasileiros e, juntos, eles encontraram soluções possíveis para um desafio apresentado na forma de uma WebQuest. O Aprendizado Baseado em Projetos (PBL) é a base para a condução do trabalho com WebQuests, ferramentas que foram criadas dentro do Centro Paula Souza, como linha de pesquisa em RJI (Regime de Jornada Integral) durante o ano de 2022 por estudantes dos cursos de Informática para Negócios e Agronegócios da Fatec Rio Preto. Este PCI foi coordenado pelas Profas. Anoush Ayunts e Edilene Gasparini Fernandes.

PALAVRAS-CHAVE: Projetos Colaborativos Internacionais (PCI); Aprendizagem Baseada em Projetos (PBL); Universidade Estadual e Yerevan (YSU); Fatecs.

INTRODUCTION

Virtual exchange (VE) is an umbrella term used to refer to the different ways in which groups of learners are engaged in online intercultural interaction and collaboration with partners from other cultural contexts or geographical locations as an integrated part of course work and under the guidance of educators and/or expert facilitators (O'DOWD, 2021).

Collaborative Online International Learning (COIL) has become a common form of

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learning in higher education. An important advantage of this type of learning is the opportunity for students to gain intercultural experience without leaving their current place of residence and university. Student participation in online exchange is also appealing because it requires less financial and organizational effort compared to traditional student exchange programs (GUTH, 2014).

A primary goal of COIL is to increase students' ability to communicate effectively in intercultural interactions. This paper focuses on the analysis of tasks used in COIL to stimulate intercultural interaction between students and allow them to gain knowledge about another culture. Students completed collaborative team projects; they selected a global problem and developed solutions for the problem while considering the cultural specifics of Brazil. We developed a project implementing Project Based Learning (PBL) and studied the impact of the WebQuest on intercultural interaction during the collaborative project and awareness of general cultural differences and those related to a specific global problem.

Project Based Learning (PBL) is a teaching method in which students learn by actively engaging in real-world and personally meaningful projects. In PBL students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge (Buck Institute for Education, 2019).

There are key characteristics that differentiate "doing a project" from engaging in Project Based Learning. In contrast to doing a project, PBL requires critical thinking, problem solving, collaboration, and various forms of communication. To answer a driving question and create high-quality work, students need to do much more than remember information. They need to use critical thinking skills and learn to work as a team. In Project Based Learning, the project is the vehicle for teaching the important knowledge and skills students need to learn.

In this particular COIL project, WebQuest was chosen to be the main tool of PBL. WebQuests are basically a kind of dynamic centered on the thought, not on the teacher, which movement allows collaboration and real application outside classes through the resolution of problems and collaborative learning (PAVÓN VÁZQUEZ & ELLISON, 2013, p.73).

As pointed out by Tom March, WebQuests of great success have tiny linking with their extended range or with the excellence of the visited websites. The most important factor is the teacher/professor's hands that is aware of his students' abilities, precious experiences, knowledge and interest in certain topics. WebQuests tend to act much more like a learning process aiming at this objective (MARCH, 1998, p. 7).

LITERATURE REVIEW

For students to acquire intercultural experience it is necessary for them to interact with people from another culture. Through COIL, these intercultural interactions take place in a virtual form. One of the most challenging aspects of intercultural communication through virtual exchange is encouraging deep level student engagement,

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especially with cultural differences (EVALUATE GROUP, 2019, O'DOWD & RITTER, 2006).

In any culture, there are both universal and culture-specific problems. Culturally specific communication motivates individuals from another culture to analyze and interpret information to explain the differences between cultures. WebQuests includes culture-specific problems which motivated students to analyze information about a specific culture which expanded their knowledge about that culture.

WebQuests were born in 1995 by the hands of Bernie Dodge and his student, Tom March. They were conceived to be a tool that would allow an integration of the subjects inside the elementary school years. Its migration towards superior levels of education has become a natural movement, considering it is a tool that has proven to be efficient in any contexts. According to Costa, "a WebQuest is an activity that appeals to the development of more important competency, like decision making, argumentation and evaluation, besides it allows a process of investigation and transformation of the obtained information" (COSTA, 2008, p.40). They bring together many of the so-called and respected teaching methods into a rather simple kind of activity. Students learn to work in groups, think creatively and use the technology at the same time.

Their point of start is a problem situation that calls for a drop of creativity from the group. By promoting a certain forgetfulness on the traditional teaching processes, the student is conducted to jump into finding the solution for the presented problem, which is a challenge for the group. These activities fit on what March (1998) calls "long-term" WebQuests, considering they deal with elaborated and deep research procedures, aiming at stretching knowledge through abstraction, deduction, induction and other processes. Generally long WebQuests may last around 30 days approximately and they must be, according to Dodge, feasible and interesting: "After completing a long WebQuest, the student is supposed to have deeply analyzed a body of knowledge, transforming it somehow, and showing a comprehension of the material by creating something others can use in the system (internet) or out of it" (DODGE, 1995, p. 1).

According to Lilian Bacich, researcher of this topic at USP, University of São Paulo, the tool allows the learning to happen through "challenging tasks" which make it possible for the group to get to a "knowledge collective construction", helped by the TICs (2020). The term *scaffolding* coined by Wood, Bruner and Ross, reminds of a climbing towards a superior point in learning, helped by the teacher/professor who will be acting, on the next level, as somebody who is merely going to keep the direction, allowing the student to act freely (WOOD at all, 1976 *apud* BACICH, 2020, p.6).

The steps of a WebQuest may vary according to the target of its question or problem, but basically, Bernie Dodge states as a first step the Introduction, a phase where the stage is prepared and some basic information is provided. A second step is the presentation of a feasible task which may trigger the group's curiosity by the adherence to real life and practical application. A third step is to provide electronic sites that may be the basis for an adventure. The fourth step is to approach the structure of the WebQuest construction, which are the Introduction to the problem or question, the task which will be shared

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among the group members, the building process of the approach and the resources which will be used. After that, the project will go through an evaluation process that will lead them to the conclusion (DODGE, 1995, p.1-2).

WebQuests make use of a constructivist approach in order to attribute to the act of learning and engaging students in building knowledge a purpose. As March states "WebQuests are not news in pedagogical environments, but they can be interesting as they make use of web resources, which are inevitable in XXI century classes through a planned and challenging way" (MARCH 2004, *apud* BACICH, 2020, p.1).

The instructional aim of long WebQuests, as we conceive the ones used in this experience, is to reach the "amplifying and refinement of knowledge", characteristics attributed by Marzano to a 3rd Dimension WebQuest (MARZANO, 1992, p.9-10). In other words, participant students have the opportunity to deeply analyze a body of knowledge, transforming it somehow and having the chance to demonstrate the entanglement of the material with the creation of something that might help others in the same system (internet) or out of it (DODGE, 1995, p.1).

This appeal to their curiosity and creativity that the Webquests challenge arises reminds us of the approach proposed by CLIL (Content and Language Integrated Learning). It is what Coyle, Marsh & Keith (2010) call learning through content. According to Banegas, Poole, & Corrales (2020), in several South American educational institutions, CLIL has been used as a tool for motivating foreign language learning through school content. In these successful cases what the authors observe is that the content is easily grasped and much more accessible to learners.

Furthermore, content made interdisciplinary functions as a didactic space for integration in the learning process. This is also observed to happen during the use of Webquests, once they tend to be seen as a medium for the language learning to take place, in our case. Interdisciplinary subjects conducted by language teachers may seem like a sightseeing through meaningful research the aim of which is clearly presented: learning the language by new vocabulary, by building up texts which express the idea for the problem answer and by transforming all the process into real expression in the target language.

PROJECT METHOD

Within English-language-learning contexts, PBL has been shown to be a powerful method that enables the integration of academic, social, and linguistic communication skills with the application of real-world issues and contexts (BECKETT AND SLATER, 2005).

The Buck Institute for Education, a leader in the development and research of PBL, describes PBL as follows: Students work on a project over an extended period of time - from a week up to a semester - that engages them in solving a real-world problem or answering a complex question. They demonstrate their knowledge and skills by developing a public product or presentation for a real audience. As a result, students develop deep content knowledge as well as critical thinking, creativity, and

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communication skills in the context of doing an authentic, meaningful project. Project Based Learning unleashes a contagious, creative energy among students and teachers (Buck Institute for Education, 2019).

The Buck Institute for Education facilitated the development of a framework for PBL based on six criteria (High Quality Project Based Learning. 2018):

1. Intellectual challenge and accomplishment: Students learn deeply, think critically, and strive for excellence.

2. Authenticity: Students work on projects that are meaningful and relevant to their culture, their lives, and their future.

3. Collaboration: Students collaborate with other students in person or online and/ or receive guidance from adult mentors and experts.

4. Project management: Students use a project-management process that enables them to proceed effectively from project initiation to completion.

5. Reflection: Students reflect on their work and their learning throughout the project.

6. Public product: Students' work is publicly displayed, discussed, and critiqued.

Successfully implementing PBL takes time, patience and careful planning, but the potential results make it all worthwhile. It is a way of challenging students by engaging them in real-world issues that are authentic and collaborative. Through PBL students learn to think critically and communicate effectively in an increasingly interconnected and globalized world (YAZDANPANAH, 2019).

Project Design and Implementation

The collaborative project was held during the months of February-March in 2022 for six weeks. Students met once a week for one hour via Zoom. Students worked virtually in small intercultural teams of six to eight people – typically three or five Fatec students and three or four Yerevan State University students. The project included six, one-hour online meetings. During the meetings, students were instructed (1) to choose a WebQuest topic, (2) to read and discuss the resources provided and (3) to produce the collaborative end-product provided in the Task section of the WebQuest.

All of the 10 Webquests were conceived by a group of 8 students who have developed them at Fatec Rio Preto, during 2022, and coordinated by Professor Edilene, according to her line of research at Centro Paula Souza institution. The result from this work is free and it is available for anyone to access: https://sites.google.com/fatecriopreto.edu.br/webquestfatec/home. In 2023 the project continues and aims at adding 10 more WebQuests to the ones already accomplished.

These tools were developed by the students from IT and Agribusiness courses at Fatec Rio Preto and coordinated by Professor Edilene, as a research project funded by Centro Paula Souza. It was a group of 8 students that conceived the ideas and developed the tool during the year of 2022. The process has encouraged some Scientific Initiations by the students, as well as papers publication by the coordinators.

Due to the good outcome of the project the research continues and our aim is to write the double number of WebQuests this year (2023), with a different group of students who work online in meetings for discussing the best ideas, the most adequate links and for

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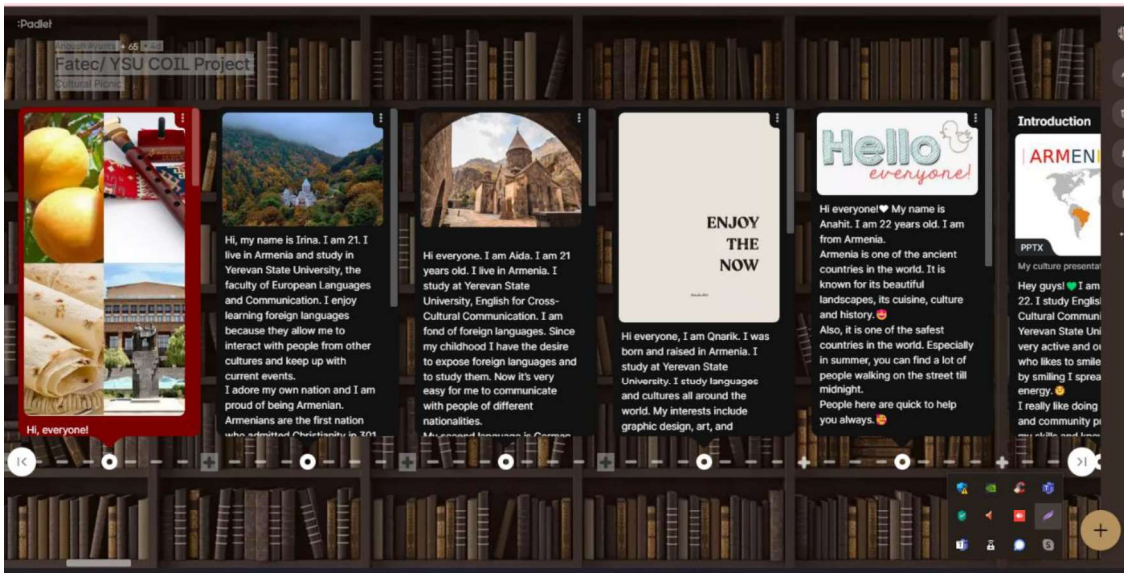
assembling the pages with pictures and resources that call for the students' attention. The following electronic address is the hosting of all the webquests provided by a research group inside Fatec Rio Preto (https://sites.google.com/fatecriopreto.edu.br/webquestfatec/home).

The starting point was an ice-breaker activity for which students have prepared themselves before by posting pictures of interesting points on their culture and countries. The following picture shows the first week meeting and all the conversation was held around the posts and the personal introduction of each one. All of the meetings were carried through Zoom and, in the second week, students were introduced to the tool (WebQuest) and the way they would be interacting with it. The links provided by each WebQuest were the starting points of their research, but they were encouraged to step out of those electronic addresses, always supported by the Armenian students who tutored their steps.

Figure 1. PCI warm ups displayed on the Padlet



Source: (FERNANDES; AYUNTS, 2023)

The Students were encouraged to communicate with their teammates outside of class using the team's preferred communication tools (e.g. email, WhatsApp). The number of participants from both countries and the selected WebQuest topics are provided in **Table 1**.

Table 1. The selected WebQuest topics

Group	FATEC students	YSU students	WebQuest topic
1	6	3	Family Agriculture
2	5	3	Home Office
3	5	3	Home Office

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4	4	2	Home Office
5	4	3	Small Solutions for a Big Problem
6	4	4	Self-driving Cars
7	5	3	How to Produce More and Avoid Deforestation
8	4	4	The Lack of Water in Northeast of Brazil

Source: (FERNANDES, AYUNTS, 2023)

During the following weeks the groups collaboratively studied the resources provided in the relevant section of the WebQuest and came up with ideas concerning the task they were going to produce. The discussions in which all the members took active participation were really fruitful, which helped the students to develop critical thinking skills. During the final week the groups presented their end-products (articles, video presentations, PPT presentations, etc.) which are available on the Padlet link above.

PROJECT RESULTS

At the end of the project a total of 40 students from Brazil and Armenia were surveyed using an anonymous SurveyMonkey questionnaire. Students answered 6 questions about (1) the different aspects of COIL; (2) effectiveness of PBL; (3) effectiveness of collaboration within the group; (4) success of the WebQuest project; (5) future participation in a similar project; and (6) recommendations for friends to participate in a similar project. As shown in **Fig. 2,** 58% of students highlighted the cultural aspect of COIL to be the most important one for them and 35% mentioned the language aspect. As for the project effectiveness, 65% of the participants evaluated the project as highly effective and 68% evaluated the collaboration within the group as very effective. Concerning the WebQuest project, 55% of the participants rated it as very successful. 95% expressed willingness to take part in a future project, while 97% mentioned that they would recommend their fellow students to take part in a similar project.

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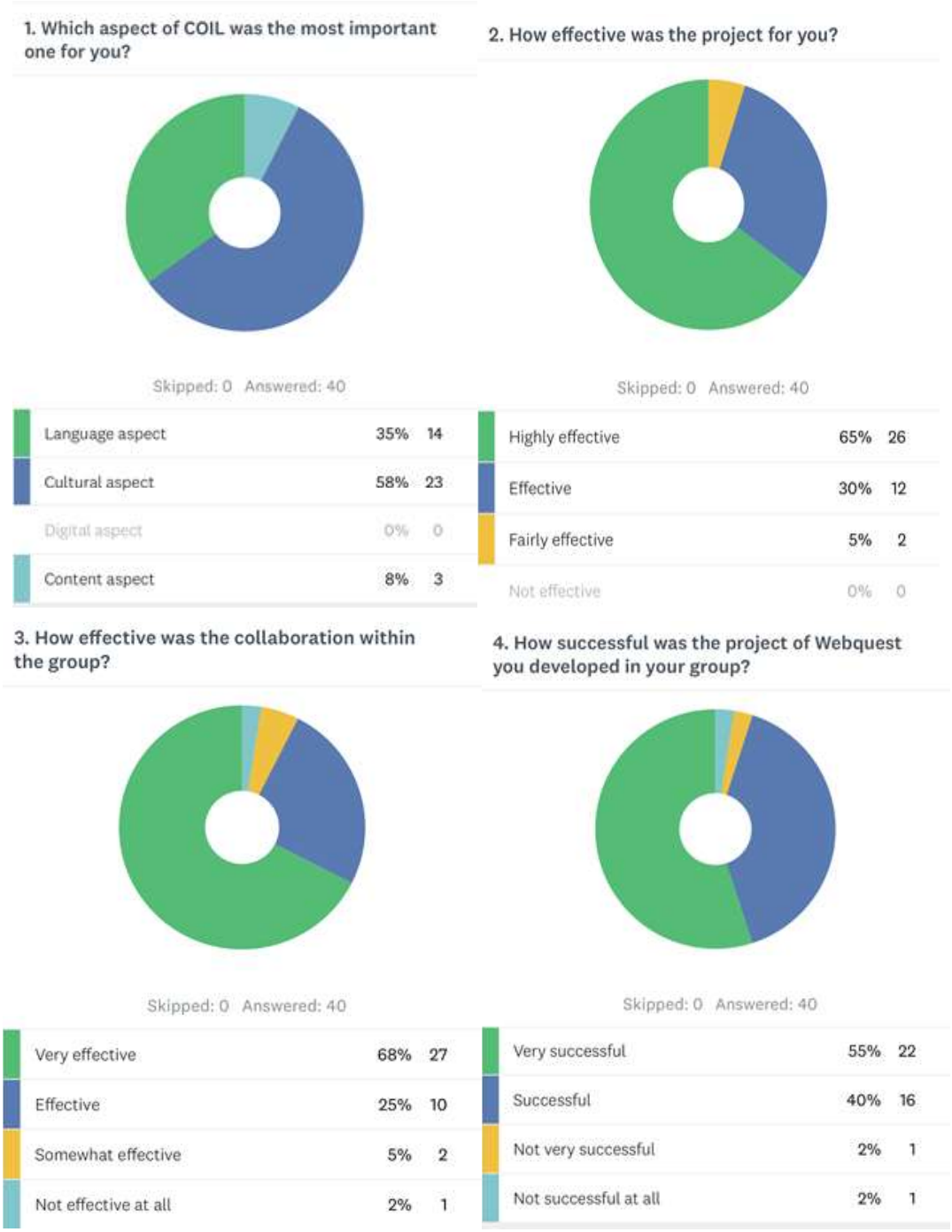
Figure 2. Survey results



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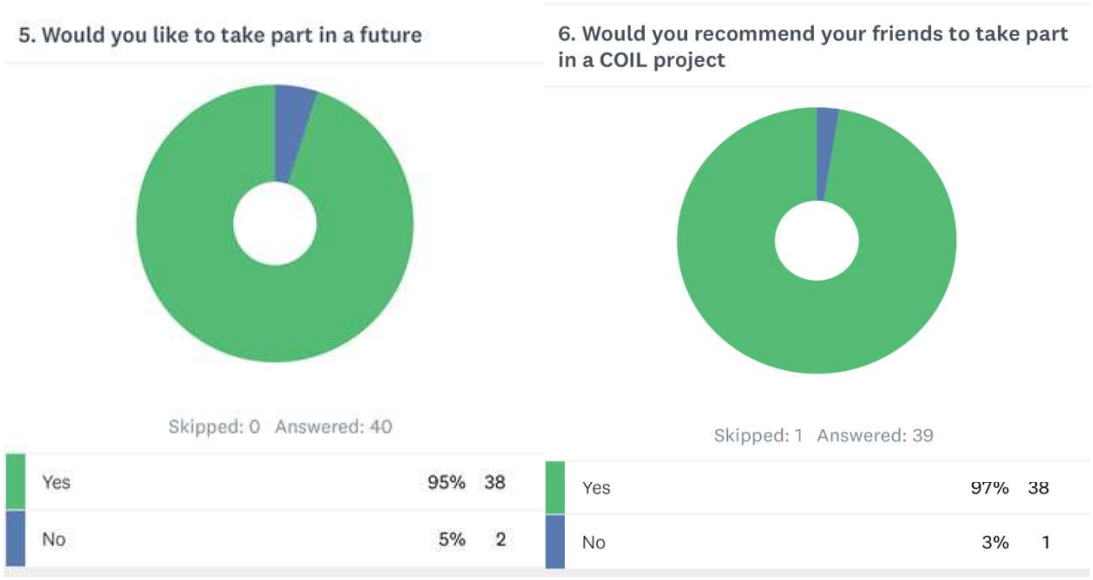

Source: (FERNANDES, AYUNTS, 2023)

Considering this was the second version of the PCI/COIL between Yerevan State University and Fatecs, professors were more comfortable in trying a new experience, and new experiences may bring surprises. The previous model of exchange kept just the same format, or else, Armenian students (professors to be) were engaged in helping Brazilian ones to evolve in some points previously chosen by the coordinators, such as grammar and phonetics. When we proposed to change the format, everyone was a little insecure about their moves, mainly because Brazilian professors would not have the same role as before and Armenian students were not used to research about technologies or nature, as the WebQuests demanded them to. We could say that there was a week of uncertainty of what was the right step to take. So, the coordinators decided to get together with all the groups to show them some support, to wipe away any doubts that might be on the way.

CONCLUSION

The result of this stepping into an unknown ground has been a warm surprise, and the works are available on our padlet page: https://padlet.com/anayunts/fatec-ysu-coil-project-ivsyium8hx9g9jpz. Some of the students were so motivated that they even conducted a research questionnaire with families which work in the countryside (Fatec Sebrae) in order to produce a more sustainable material. The presentations made use of technology tools and the demanding tasks allowed positive results.

A reflective thought that this process may have aroused is that we can be freer in creating environments for PCI's conduction. There are no boundaries for engaging students in projects like this, once it happens with a serious plan and organized moves. Another good conclusion it may bring to us is that freedom of creation, together with a game-like environment, as we support on our research lines as academic professors, generally present favorable results. The secret seems to lie in breaking up academic boundaries. Fellowship, cultural diversity, resilience are good exercises for a world that is changing, hopefully for better.

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Summing up the survey results, we can claim that the project was a success. Students improved their English language skills, enhanced their cultural competences, collaborative skills, as well as the ability to think critically in providing solutions to different problems.

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