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FOSTERING DIVERSITY AND CULTURAL AWARENESS EMANATED FROM LEARNING ONE'S CONTEXT

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In recent years, technology - enhanced learning environments bring parts of the world into the classroom. This paper values the importance of integrating cultural elements into the construction of scientific knowledge through educational practices, especially during the first school years of an individual. The evidence is drawn from a research project based on the implementation of a context effect-innovative learning strategy involving the use of technology to facilitate exchanges between learners around the globe. In our study case, putting synchronous and asynchronous forms of communication into practice between students in Guadeloupe and in Quebec, we identify the extent of children's active construction of scientific and global knowledge nurtured within intercultural experiences. Participants were asked to supply answers (during the post-test questionnaire phase) related to their impressions and the milestones acquired during communication with diverse cultures -peoples and contexts. As a result, the intricate world of their understanding inspired by their intercultural exchanges has been qualitatively classified into different categories and presented in this article for further exploration.

Keywords: Culture, Context-effects, Collaborative Online Learning

INTRODUCTION

Societal and cultural factors have an important impact on children's development, in particular when they form their identity and when they shape their mental representations of the world. As one's cognitive development is built upon the interpretation of different schemas (Piaget, 1926), children tend to interpret their environment by elucidating information within the intellectual experiences they undergo. In a social-constructivist approach, young children construct actively their own learning and making sense of the world when interacting and collaborating with others (Vygotski & Sève, 1985). Alongside, cultural artifacts -as means of society's values, events, symbols- provide a vital framework for individuals to collect units of knowledge of other people's way of living and share meanings with them. In the realm of education, the intercultural dimension is portrayed as one of the more important objectives of learning procedure: one's decentration from their own cultural-based assumptions by reconceptualizing their worldviews in consistency with appreciating other people's contexts (Scarino et al., 2009). Regarding scientific thinking, learners can reflect on and investigate their natural environment by making inquiries (Cariou, 2009) which will then help them to answer specific questions leading to the development of a general and worldwide content (Gauch, 2009). Considering all the aforementioned, the outpouring of scientific interest and work of people is enhanced by the implementation of learning experiences putting them in collaboration - a procedure whose communication is undoubtedly nurtured when one creates and exchanges meanings across cultures, across contexts. Acknowledging the huge potential of new technologies into teaching and learning practices, it is now possible for learners around the world to maintain ties with their peers and to construct their knowledge and views in a computer-supported collaborative environment. The advances in virtual collaboration reveal many opportunities for connecting online learners in the spirit of real-world and authentic learning situations (Bonk & Cunningham, 1998). In some respects, exploiting the collaborative aspect of learning and meaning making mediated by technology (Baker,

2003; Dillenbourg, 1999) children are prone to develop a positive aspect towards community participation and as an extension towards the concept of global citizenship for civil society.

THEORETICAL FRAMEWORK

General theoretical model and context-effects

This study is a part of a larger project, under the name "Technologies Éducatives pour l' Enseignement en Contexte -TEEC" (in French), "Educational Technologies for Teaching in Context" (in English). It is funded by the French National Research Agency (ANR) and the Quebec Research Funding for society and culture (FRQSC). Its objectives entail the development and implementation of a learning approach based on context-effects between learners in Guadeloupe and in Quebec (Forissier et al., 2017). In essence, students from different contexts collaborate together in short-term research projects, linked to different scientific disciplines: geothermal energy, sustainable development, linguistics, socio-history. Their exchanges (oral or written) flourish through synchronous and asynchronous communication environments. In each experimentation, students who are normally in small groups, they are asked to investigate a particular aspect of a given object of study strongly related to their enriched context. During their inquiry process, they interpret information of their context by exchanging and discussing on diverse topics with their peers. In this way, they relate their findings to the findings of others, and they enrich their knowledge by situating their unit of knowledge in respect of relevance and meanings. Throughout students' exchanges during these research practices, a conceptual change is expected by grounding a clash between students' perceptions in those particular contexts, hereby an emergence of a context effect, in the study of the same object or concept (Merlo-Leurette & Forissier, 2009).

Review on cultural competences

Online interactions and collaborations offer huge potentials for developing students' skills. The work of Marope et al. (2017) states that future curricula (4.0) will be based upon learners' competencies such as social and cultural awareness but the need of understanding the demands of learner's context is essential. Having learners from Guadeloupe and Quebec as participants in these experimentations has raised our interest, among other things, in investigating the perspectives of cultural competences issued of their exchanges. For defining the latter, we cite the work of Cross et al. (1989) which refers to cultural competence as "a set of congruent behaviors, attitudes, and policies that come together in a system (..) and enable that system (..) to work effectively in cross-cultural situations". According to Jason (2014) , this is "an ongoing process by which individuals and systems respond respectfully and effectively to people of all cultures, languages, classes, races, sexes, ethnic backgrounds, religions, sexual orientations, abilities and other diversity factors". Undergoing this process means that an individual should go through different phases, known as a cultural continuum (Cross, 2012), from cultural destructiveness to cultural proficiency. Some phases in between those two extremes refer to cultural incapacity, to cultural blindness or to cultural pre-competence. In essence, according to Hall (1989). "In its many forms, culture (..) designates what we pay attention to and what we ignore". As a result, individuals tend to adopt different communication strategies into a process which is called "contexting' by which they filter and evaluate the kind of information they would like to obtain or share with others (Zakaria & Cogburn, 2010). The same work adds that when individuals from diverse cultural backgrounds communicate, the understanding of this process is what helps on overcoming or minimizing cultural differences.

RESEARCH METHOD & DESIGN

The general methodology of the TEEC project is the one of Design-Based Research – DBR (Bourdeau, 2017). Data concerning the influence of context-effects on participants' learning outcomes were collected by pre-test and post-test questionnaires.

Study's focus and research questions

This work focuses in particular on two in-situ experimentations that took place in primary schools: one focusing on linguistics (object of study: folktales of Antilles, of Québec) and the other one on education for sustainable development (object of study: sugarcane, maple syrup). Following the iterative feature of DBR (Akker, 2006), when designing the post-test questionnaire, we added a number of questions in order to measure validly children's' feedback and retain their impressions emphasizing on their own context and the context of their peer team. The general content of additional questions is displayed in the Figure 1 and they are further explained in detail later on this article (cf. Content analysis approach).

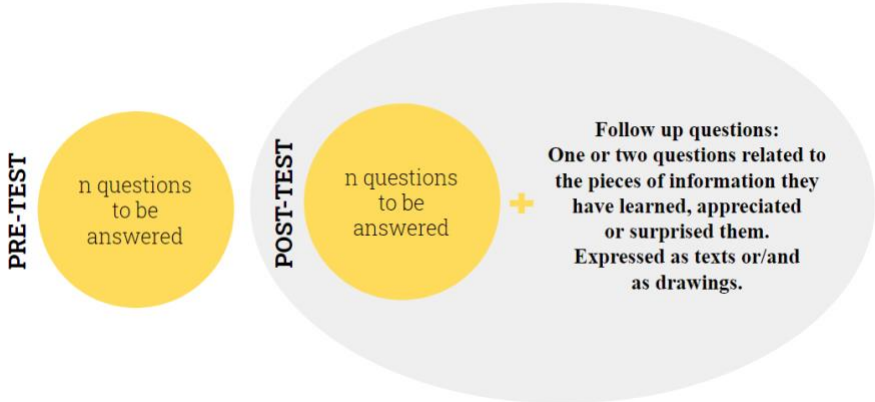

Figure 1. Additional questions in post-test questionnaires for each experimentation.

The main research questions addressed in this study are summarized as follows:

RQ1: Which kind of context is elaborated during the scientific learning and understanding of young learners from different contexts?

RQ2: What type of elements of cultural understanding emerge after the completion of a didactic and collaborative experience between young learners from different contexts?

Content analysis approach

First of all, we provide an overview of the questions asked to the participants of this study. For the experimentation "Linguistics" the question was the following:

- Write in a few words or/and draw what impressed (or surprised) you during the exchanges with the students of the other class.

For the experimentation in "Education for Sustainable Development" the questions were the following:

- What did you learn during the exchanges with the students of the other class?
- Write in a few words or/and draw what impressed you (in our context, in the other context).

These are considered as open questions and the drawing task was proposed as in some cases is an effective communication tool for young children (Farokhi & Hashemi, 2011). For the purpose of examining the RQ1, we perform an inductive content analysis (Bengtsson, 2016) of the answers provided. For each participant, written texts or/and drawings in response to one follow-up question

were processed as a single unit of analysis. For the RQ2, our analysis is inspired by the framework on cultural dimensions proposed by (Overall, 2009) which was in fact designed for library and information science (LIS) scholars.

FINDINGS

This study involves children aged 10-12 years old from Guadeloupe and Quebec who participated in the two aforementioned experimentations. The data retrieved from their answers (N=43 from Guadeloupe, N=46 from Quebec) in the questions mentioned before during their post-test questionnaires. Their replies were formed after participating in learning situations, involving verbal and nonverbal communication during synchronous sessions (regular videoconferences) and information shared respectively in an asynchronous communication platform, in our case the social learning platform called Edmodo (www.edmodo.com).
In respect of our exploratory research design, our analysis focuses on identifying patterns and characterized the elements emerged during their intercultural exchanges.

Highlighting the context-effects

When examining the answers given, distinctions are drawn between three different scales (micro, meso, macro). We highlight that these effects have been categorized upon the ideas expressed in their replies. More specifically, we investigate if the content was demonstrating a concept embodied either by observing their real environment or by exchanging with the learners from the other context. The categories are the following:

1. Related to *didactic context (course)*: elements representing the subject content learning and teaching, content knowledge related to the object of study (folktales, sugarcane/maple syrup) of the experimentations they have participated
2. Related to *educational context (institutional settings)*: elements representing the existing conditions and the culture of the school, educational practices and strategies occurring in the school environment
3. Related to the *socio-cultural context (society)*: elements representing climate, language, habits, traditions and lifestyle in the outside world

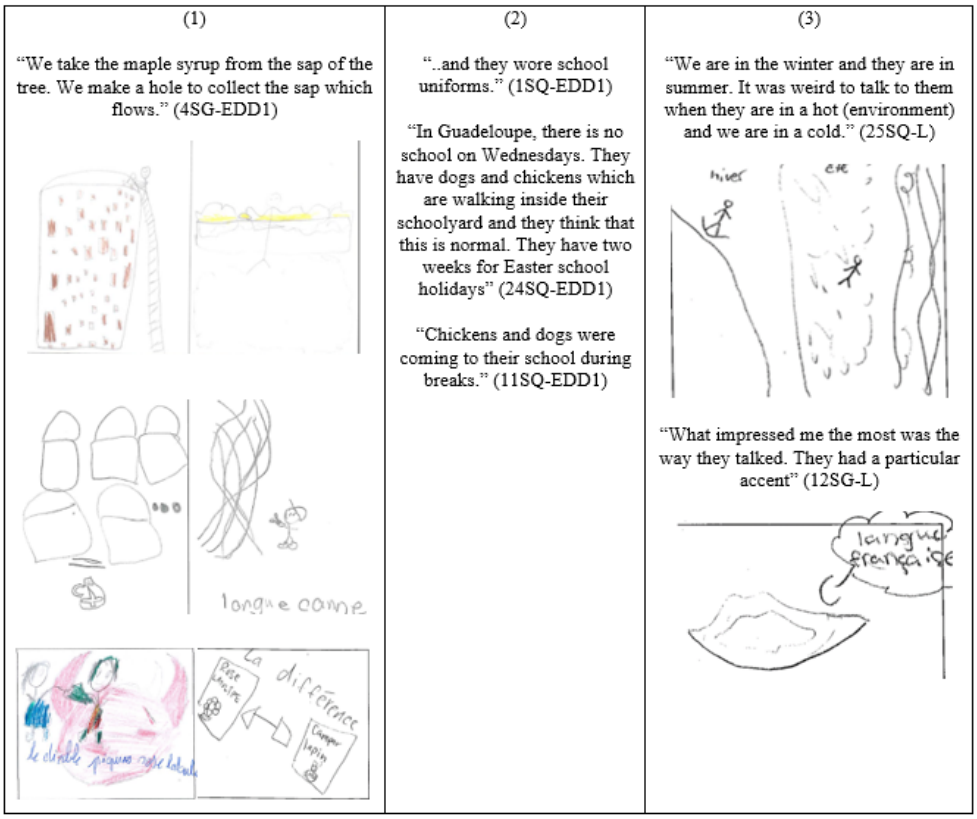

Figure 2. Examples of didactic (1), educational (2), socio-cultural (3) context.

Figure 2 depicts a small sample of the answers provided from the student of the two contexts for each category. We need to note that in general children illustrate examples of things they saw during the videoconferences, information communicated to them from their peers via verbal or non-verbal cues, aspects they observed during their field trips with their classmates.

Cultural competences in perspective

As mentioned before for investigating the presence of cultural competences stemming from the exchanges between learners from Guadeloupe and Quebec, our work is inspired by the framework proposed by (Overall, 2009). According to this article, cultural competences encompass three dimensions: the cognitive, the interpersonal and the environmental one. Along with the classification we performed during the previous section, we believe that most answers included in the third category (cf. socio-cultural context) could be further analyzed into the perspective of cultural competence as those elements exhibit a form of cultural understanding and awareness. Hence, in this section we present a sample of examples that demonstrate cultural competences in the following categories:

1. *Cognitive dimension*: Elements showing individual perceptions for their culture in the alignment with the culture of others, their general knowledge about the culture of others.
2. *Interpersonal dimension:* Elements showing emotions and abilities to collaborate and communicate with others.
3. *Environmental dimension:* Elements showing the understanding of different conditions of a culture (environment, language, natural resources)
4. *Not classified:* Examples that could not be classified in the dimensions mentioned before.

To illustrate these dimensions, in the Figure 3 we present a sample of the answers provided by learners from both contexts.

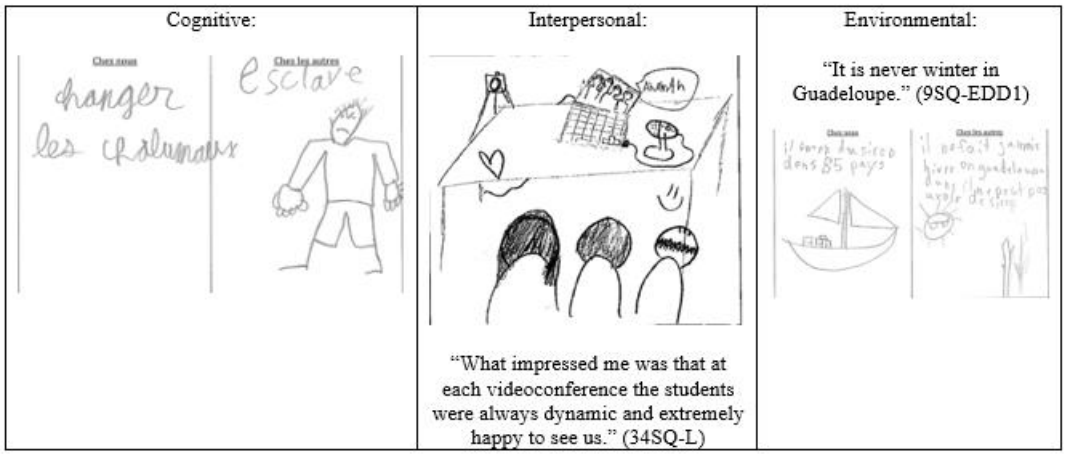

Figure 3. Examples of dimensions of cultural competences.

DISCUSSION

This study demonstrates some preliminary results on the different types of context that can be found in an evaluation phase of a learning experience involving an international audience, in our case students from Guadeloupe and Quebec. However, it is important to highlight some of the limits of this study:

a) In this case study we have a small sample size.
b) Our contexts are Guadeloupe and Quebec, so we cannot generalize all findings for other contexts in interaction.
c) No post-interviews were conducted after the completion of the post-questionnaires.

It provides an insight on the context-effects that can be evoked during this procedure and additionally on the use of these data to further investigate the cultural competences introduced to young learners. The analysis on cultural competences need to be further explored.

CONCLUSION

As child expression is in their nature, there is a huge need of providing them more exciting pedagogical opportunities which will enable them to co-create their worldwide perceptions and build their knowledge in collaboration and in a creative way. Interpreting and revealing elements of their feedback on a research project which supports their intercultural development in practice validates the identification of all these artifacts promoting cultural diversity awareness among them. Sfard (1998) points out the importance for a learner to participate in various social-meditated activities (participation metaphor in learning theories) within a community of knowledge. Transforming learning in the era of computer-mediated environments into making-meaning events rich in discussions and intercultural exchanges is a challenging task for the future. Up to this point, the advances in technological tools can instill empowerment to children regarding the exciting adventure that they will face in the future. The development of learning practices such the one described can embrace innovation in education, more specifically in scientific investigations, along with opening a channel of communication with others. To conclude, as Byram et al. (2001) highlights: "it is not the purpose of teaching to try to change learners' values, but to make them explicit and conscious in any evaluative response to others".

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