

Orchestration challenges raised by transporting a traditional writing activity into a web-based Computer Supported Collaborative Language Learning activity

Eirini Dellatola, Open University of Catalonia, edellatola@uoc.edu
Thanasis Daradoumis, Open University of Catalonia, University of Aegean, adaradoumis@uoc.edu
Yannis Dimitriadis, University of Valladolid, yannis@tel.uva.es

Abstract: Language teaching is dominated by traditional methodologies and teachers argue that elaborated pedagogies combined with innovative technologies lead to a classroom with a “complex ecosystem”. Attempting to understand the causes of the appearing management issues, this paper uses the term orchestration to describe real-time management of learning processes and examines the orchestration challenges raised when transporting an individual writing activity into a Computer-Supported Collaborative Language Learning (CSCL) one.

Keywords: CSCL, orchestration, language learning, writing activity

Introduction

Many modern foreign language teaching methods have originated from the Communicative Language Teaching movement, which supports the use of CSCL activities and the communication among students. Collaborative learning has been considered an effective instructional strategy and studies have shown that collaboration benefit students’ learning; students feel more comfortable when interacting with peers, their negotiation skills are improved and all students participate actively (Chen, Looi, & Wen, 2011). Particularly, language learners need to use the target language to interact with each other and exchange information in social and meaningful context which allows assimilating new information into existing schemata (Domalewska, 2014).

However, the majority of CSCL activities usually fail to incorporate rewarding collaboration mostly because teachers assume incorrectly that a technological innovation in a collaborative environment is enough to guarantee effective collaboration (Dillenbourg & Tchounikine, 2007). Besides, there are many other components that influence the learning outcome. The design model, its implementation as well as the assessment and scaffolding approaches are some of them (Cullen, Kullman, & Wild, 2013). Another critical point is to design appropriate learning tasks so that students engage actively (Kim 2015).

In an effort to understand the large gap between the research proposals and their implementation, many researchers use the term orchestration to refer to how a teacher manages, in real time, multi-layered activities in a multi-constraints context (Dillenbourg, 2013). Language learning researchers have concluded that the appropriate orchestration influences greatly the outcome (Meskill & Anthony 2007; Del et al. 2008).

In this ongoing project, the main objective is to identify the orchestration problems that occurred due to the introduction of CSCL in a traditional paper-based pedagogical activity. Particularly, the study aims to answer the following research questions: (1) What was the learning achievement of the activity in each case? (2) What was the students’ perception? (3) What are the orchestration challenges that occurred in CSCL activity?

Methodology

The participants of the study were 25 Greek students of English as a foreign language in intermediate and upper-intermediate level (aged 12-15) divided into two groups (control and experimental). The experimental group consisted of 16 students divided in 7 teams while the control group consisted of 9 students. Students of the control group were assigned to an inquiry-based writing activity in which they had to find information online and then work individually in the classroom. The members of the experimental group had to complete the same assignment working in small groups through a Virtual Learning Environment (VLE) which included a chat for communication and a wiki for the collaborative writing process.

The independent variables in the study were the treatments of the two different groups and the main dependent variable was the learning achievement; students’ writing projects were assessed regarding their fluency, grammar, vocabulary range, cohesion and content and the data were analysed quantitatively. In order to study the students’ perception of the collaborative learning environment, the members of the experimental group answered a questionnaire in their mother tongue and their answers were analysed quantitatively. Finally, with the use of the revised conceptual framework for orchestration in learning technology research (Prieto et al.,

2015) the orchestration challenges that occurred during the collaborative process were identified (by observing and taking notes in real time) and the researcher's observations were qualitatively analysed.

Findings

Regarding the learning outcome, the descriptive statistics suggest that the collaborative texts achieved higher levels of fluency, grammar, vocabulary range and content but not of cohesion. A t-test on comparison of the means of the two groups was performed to detect a possible statistical significance, while a non-parametric Mann-Whitney U test confirmed the results. The difference in fluency, vocabulary range, cohesion and content is statistically significant but not in grammar. Hence, the learning outcome is overall enhanced in terms of fluency, vocabulary range and content when the activity is collaborative while the cohesion is decreased.

Students' responses in the questionnaire revealed that positive attitudes were held towards both the collaborative activity and the system used. The great majority of the students stated that their motivation was somehow increased because of the collaborative nature of the activity.

According to the revised "5+3" framework, the main themes of orchestration were divided in three categories: the entailed activities, the performing actors and background (Prieto et al., 2015). Regarding the activities there were a few management problems and the selected topic did not trigger valuable and authentic communication. With a reference to the actors, many students lacked the basic skill of searching online and needed some scaffolding before starting the inquiry process. Additionally, many students have difficulty to express themselves accurately in the foreign language. Regarding technology, the chat did not support an alert system and the wiki tool did not allow students to collaborate simultaneously. Finally, some orchestration background constraints appeared. Firstly, the time dedicated to the activity increased due to the implementation of CSCLL. Students not only spend time to familiarize with the VLE but also to organize the activity and share responsibilities. In addition, there was space limitation due to the capacity of the computer lab and prior planning was necessary. Some discipline problems also occurred with students either using their mother tongue while chatting or being behind with schedule. Finally, one unexpected problem occurred during the experimental phase when one student was absent and an on-the-fly change of the grouping was necessary.

Conclusion and future work

The results of the study suggest that even though there were management problems, the students valued the collaborative activity positively. The learning outcome of the CSCLL activity was improved in many aspects. With regard to orchestration issues, the implementation of 5+3 framework helped us recognize the designing and management problems. Unlike other learning environments, language classrooms differ to the point that the language is not only the medium but also the target of the learning process. Consequently, many communication problems arise when the level of students' proficiency is low. Further research carried out over a longer time frame, a larger sample and a different approach with a more holistic view based on mixed methods is needed in order to better understand the potential of CSCLL in the classroom and the orchestration constraints that occur.

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